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AC Speakers Voice Confidence in Future; eed for More Industry Statistics Cited

SPRING LAKE, N.J. — A critical industry self-appraisal, a note of confidence and a cautiously optimistic view of the nation's economic outlook marked the opening session of the National Agricultural Chemicals Assn. meeting here Sept. 7.

Opening-day registrants for the 22nd annual meeting of the group heard speakers stress that, with a sound business approach, the pesticide industry can capture more and more of a vast potential market in the years ahead. A glimpse at that potential was provided by W. W. Allen, Dow Chemical Co., Midland, Mich., association president, who said that it well may take 100% more chemicals to produce the 40% more food that this nation will require in the next 20 years.

Another first-day speaker, Warren Moyer, Chipman Chemical Co., Inc., Bound Brook, N.J., set up these standards for the industry in pursuing its long-term goals: "Good research, honest technical service, sound sales policy and realistic merchandising and general management policies."

Dr. H. E. Luedicke, editor of the Journal of Commerce, New York, was cautiously optimistic about the economic climate in which the industry will be working during the next several years. He said, however, that the next 60 days will have more influence on the nearby (12 to 18 months) business outlook than any similar period in the last few years.

Mr. Allen, in his presidential address on "The Association of Tomorrow," urged that the NAC greatly expand its public education effort.

"As an association we have been on the defensive for too long," he said. "Public education is costly, but education carries a bargain price compared to the costs of lawsuits, adverse legislation and the general frustration and lost motion of spending most of our time defending ourselves.

"Being on the defensive is especially annoying when you and I believe in our own hearts that we are doing a good job in the judicious sale and manufacture of our materials . . . and we certainly are."

The NAC president also repeated a plea he made at last spring's convention in St. Louis for an organized effort to collect industry statistics and market facts.

"We need good statistics about our markets and we need them now," he said. "We are a big and complex industry, and our markets are often very new. When we forecast without enough data, and when we live in secrecy, we invariably overestimate the size of the market.

"And usually we underestimate the manufacturing and selling costs because we overestimate the market. That means overproduction and low profit margins. The simple solution is to supply the association with a wealth of collective information on actual markets and share it."

Over-all figures of production capacity, periodical production and sales figures and reports of inventory are specifically needed, Mr. Allen said.

He recommended that Lea S. Hitchner, NAC executive secretary, and his staff design report forms "as soon as they can get them in the mail for segment by segment of our industry." Returns would be made to a neutral and confidential party such as a designated bank or the U.S. Department of Agriculture.

Mr. Allen said that in the next 20 years about 60 million persons would be added to this country's population. The resultant increased demands for food and fibre would have to come without much increase in cropland, and "we must produce three bushels of potatoes or three steers where we are now growing one," he said.

He pointed to the vast changes made in recent years in food mer-

(Continued on page 20)

DA Scientists udy Movement of stemics in Plants

MOPA Absorbed and Translocated Both Upward and Downward

ASHINGTON — Greater knowl- of how certain chemicals move e plants — now being obtained igh basic research by plant iologists of the U.S. Department griculture—may ultimately lead evelopment of superior materials lant-pest control, the department rts.

hese investigations involve study systemic chemicals, substances ch exhibit unusual ability to move, to be "translocated," from one t of a plant throughout the plant especially to its extremities. In y phases of this work, radioactive ers play an important part.

One new systemic chemical the entists have studied is MOPA— ha methoxyphenylacetic acid.

r. John W. Mitchell and cowork- of USDA's Agricultural Research vice have made extensive tests MOPA and other potential plant emics. Their experiments show MOPA applied to plant leaves

(Continued on page 20)

C to Construct Fertilizer Plants

ICHMOND, VA.—Virginia-Caro- Chemical Corp. has announced s for the construction of three fertilizer plants in the Midwest. he plants, each designed for the duction of high analysis V-C Fer- ers, will be located at Orrville, o; Remington, Ind., and Esther- e, Iowa. The company said it plans tart construction immediately and ects each of the plants to be in duction by next spring.

hen the new facilities are com- ted, V-C will have 39 fertilizer nts in operation throughout the ion.

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Cooperation of Government, Industry Researchers Called Vital to Pesticide Industry

SPRING LAKE, N.J.—The important role played by research in the agricultural chemical field was discussed by speakers on the program of the National Agricultural Chemicals Assn. convention here Sept. 8.

Government research aids the pesticide industry to establish standards for safe use of its products, the group was told. Dr. S. W. Simmons, chief of the technology branch, communicable disease center of the Public Health Service, Atlanta, Ga., and Dr. J. T. Thurston, director, Stamford Laboratories, American Cyanamid Co., said that expanded research in agricultural chemicals is helping to boost farm production. Prof. G. E. Lehker, professor of entomology, Purdue University, Lafayette, Ind., spoke on "A New Approach to Agricultural Chemicals Public Relations," and Lea S. Hitchner, executive secretary of the association presented his report to the group.

In developing his theme of government's role in cooperating with the insecticide industry, Dr. Simmons pointed out that new products have been developed through government research. These, he said, include Allethrin, and DDVP, as well as further information concerning Rotenone, DDT and Organophosphorus compounds including Diazinon, Malathion and Dipterex.

"In search for new means for con-

(Continued on page 21)

Pesticide Safety Plan Proposed For NAC Backing

SPRING LAKE, N.J.—A. W. Mohr, California Spray-Chemical Corp., Richmond, Calif., proposed that the National Agricultural Chemicals Assn. set up a formal safety educational program for the customers of the pesticide industry in a talk at the NAC annual meeting here Sept. 7.

He suggested a two-part program, one part for the industry itself and one for the association.

For the industry's part he proposed:

That all media prepared for public consumption such as pamphlets, sales literature, recommended spray programs and advertisements, include a paragraph or statement on safety. If not practical to do this because of space limitations, attach or include

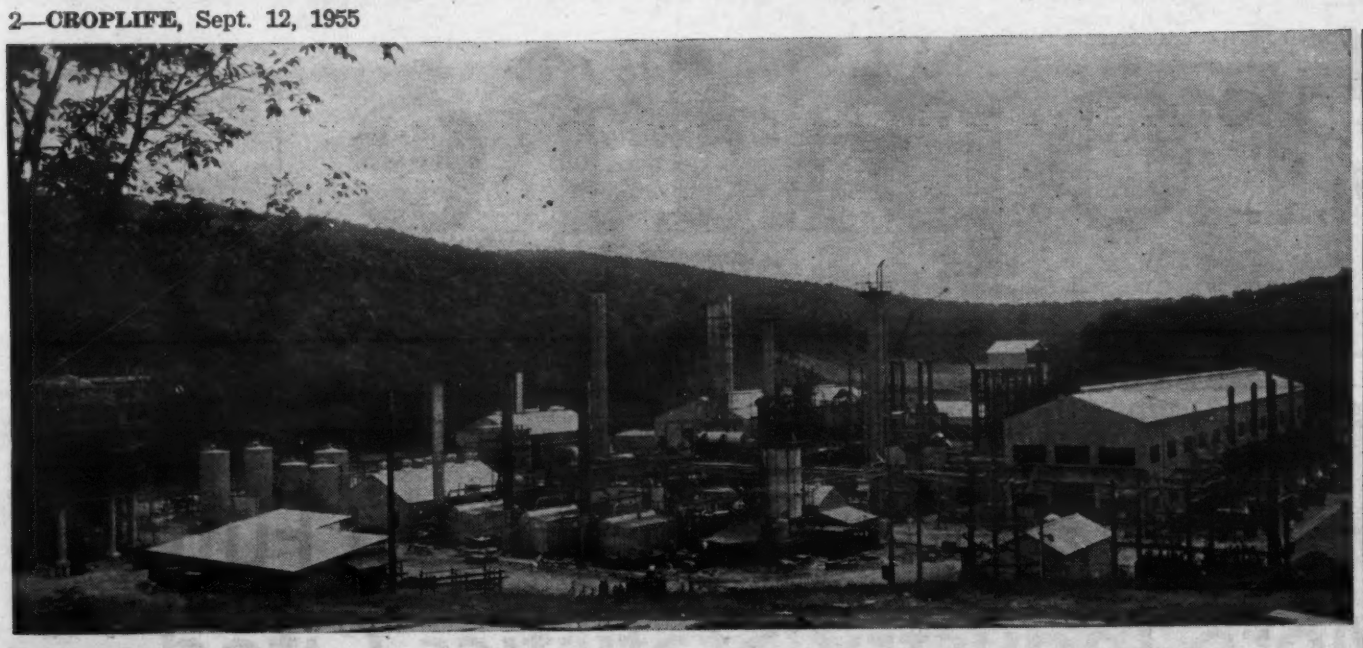
(Continued on page 21)

NAC OFFICERS REELECTED

SPRING LAKE, N.J.—Officers of the National Agricultural Chemicals Assn. were reelected during the group's convention here. They are: W. W. Allen, Dow Chemical Co., Midland, Mich., president; Fred W. Hatch, Shell Chemical Corp., New York, vice president; Lea S. Hitchner, Washington, executive secretary and treasurer, and Miss Lee Grobe, assistant treasurer. Three new board members were elected. They include Loren P. Scoville, Diamond Alkali Co., Cleveland; W. J. Lipfert, Woolfolk Chemical Co., Ft. Valley, Ga., and James D. Hopkins, Hopkins Chemical Co., Madison, Wis. The three replace T. W. Wilkerson, American Cyanamid Co., New York; Russell B. Stoddard, Niagara Chemical Division, and Arthur W. Mohr, California Spray-Chemical Corp., Richmond, Cal.

CONVENTION COVERAGE

Coverage of the fall meeting of the National Agricultural Chemicals Assn. is by the following Croplife staff members: Lawrence A. Long, Donald Neth and W. E. Lingren, all from the Minneapolis office, and Paul L. Dittemore, from the New York office.



Mississippi River Chemical Co. Nitrogen Plant on Schedule

ST. LOUIS—Progress in the construction of the new $16,000,000 petrochemical plant on the banks of the Mississippi River at Selma, Mo., by the Fluor Corp. of Los Angeles, is shown in the above aerial view.

The new plant of the Mississippi River Chemical Co., a division of Mississippi River Fuel Corp. for the production of nitrogen products is rising on schedule for completion the first few days in October.

Plant production is designed for 200 tons anhydrous ammonia a day and other facilities, including a 220-ton per day nitric acid unit, prilling plant, deep water wells, and storage facilities (not shown in photograph) are expected to start operating some time before.

All the products of the new plant, ammonium nitrate fertilizer, nitrate solutions, and anhydrous ammonia for agricultural use will be marketed under the Mississippi River Chemical Company's "Steamboat Brand" trademark. They will be distributed through regular fertilizer manufacturing channels by Bradley and Baker, national sales agents and representatives for basic plant foods and feed ingredients and supplements.

Construction of the new plant was started last December, after a mammoth earth-moving job of 500,000 cubic yards. A special road a mile and one half long had to be built to connect with Highway 61 for truck shipments, and one and eight-tenths miles of railroad siding had to be laid from the main line of the Frisco Railroad Company to service the plant.

The plant will cover the southern portion of the 4,600 acre plant site and will employ some 150 people.

7.6 Million Acres in Great Plains Sprayed for Weed and Brush Control

MANHATTAN, KANSAS—A total of 7,384,920 acres of cropland were sprayed for weed and brush control during the year in eight Great Plains states, according to a recent report prepared by R. I. Throckmorton, chairman of the Committee on Conditions of the Great Plains Agricultural Council.

His study, based on information collected by county agents and assembled by the state extension services, also shows that 305,273 acres of pasture land were sprayed in the area during the year.

The acreage of cropland sprayed was far in excess of that sprayed in 1954, Mr. Throckmorton reported.

He also noted in his report, which is a summary of conditions in the Great Plains area as of Aug. 1, that there were 37 counties that reported serious damage from grasshoppers, as compared with 23 counties a year ago. Light damage occurred in 186 counties and 86 counties reported no damage.

Severe damage was reported in two counties in Colorado, 12 in Kansas, three in Montana, seven in Nebraska, four in New Mexico and nine in Texas. Light damage was reported by 15 counties in Colorado, 46 in Kansas, five in Montana, 53 in Nebraska, four in New Mexico, 16 in North Dakota, 37 in Texas and 10 in Wyoming.

The report also shows that during the past year 148,838 acres were returned to grass by natural revegetation. During the preceding year, 87,399 acres were returned to grass by this means. Through reseeding 463,895 acres were returned to grass during the year as compared with 484,099 acres during the previous year.

Thus, a total of 612,733 acres was returned to grass during the past year as compared with 571,498 acres returned during the previous year. Dry soil conditions made seeding impossible in many areas.

During the last 20 years, 15,335,897 acres have been returned to grass. No doubt some of this land has been rebroken, yet the trend is encouraging, Mr. Throckmorton said.

North Dakota returned more land to grass during the last year than did any other state with a total of 273,970 acres. Wyoming ranked second with 110,551 acres.

The reports show a trend toward increasing the acreage of forage crops in 225 of the 362 counties reporting. The trend is relatively uniform throughout the region. There are only nine counties decreasing the acreage of these crops and these are widely scattered.

In general, conditions are somewhat more favorable for crop and livestock production throughout the region than was the case last year. There are relatively large areas where precipitation from Jan. 1 to Aug. 1 was far below normal and in many of these areas precipitation was extremely low during the latter one-half of 1954.

Lack of precipitation has led to poor prospects for the production of feed crops in the central and southern parts of the region, thus continuing a critical situation although conditions are better than they were last year. The lack of grass on ranges and pastures in the southern states to meet the needs during the remainder of the season will further reduce feed reserves.

The following table shows the number of acres sprayed for weed and brush control. (No report was received from Oklahoma and material was incomplete for South Dakota.)

State	No. of acres sprayed: Crop land	Pasture land
Colorado	326,199	7,810
Kansas	535,994	32,853
Montana	1,583,000	12,960
Nebraska	1,120,117	94,695
New Mexico ...	54,885	4,150
North Dakota .	3,444,200	65,025
Texas	258,500	78,300
Wyoming	62,025	9,480
Total	7,384,920	305,273

Borden Co. Enters Fertilizer Field with Nitrogen Product

NEW YORK—A new "slow release" nitrogen fertilizer compound, designed to last turfgrasses and ornamentals for an entire growing season with a single application, has been developed by the Chemical Division of The Borden Co., according to Augustine R. Marusi, president of the division. The compound represents Borden's entry into the chemical fertilizer field.

Based on a 38-0-0 formula, the product is derived from urea formaldehyde. It is non-burning and will release nitrogen steadily for periods ranging from six months to a year, the firm says. It is called "Borden's 38."

Available now in 50-lb. bags through wholesalers in the turf and ornamental fields, Borden's 38 will be marketed in smaller packages for home use early next spring. Sales of the new product will be handled by A. G. Vojick, who has served the horticultural field for many years and recently joined the Borden Chemical Division sales force.

Dow Offers Stock Issue to Employees

MIDLAND, MICH.—The Dow Chemical Co. has announced a price of $47 per share on an issue of 200,000 shares of its common stock to be offered to its employees and those of certain subsidiaries and associated companies.

The new offering, to be known as the 1955 Employees' Stock Purchase Plan, will be the seventh since 1948 when the company first started selling common stock to its employees on an installment basis.

As in previous plans, eligible employees will be permitted to subscribe for stock up to 10% of their annual wage. Subscriptions are being received between Sept. 6 and Sept. 30, inclusive.

Employees will purchase stock under the payroll deduction plan with payments starting early in October and being completed early in August, 1956.

Air Force Aids In Mosquito Fight

DOVER, DEL.—The U.S. Air Force has concluded its war against one of the most vicious enemies to hit the Dover area in many years—the big long-range mosquitoes. Dover is the capital city of Delaware.

For several weeks, C-47 transport planes from Dover Air Force Base have been spraying the area with a lindane mixture, and have covered more than 14,000 acres surrounding the base, as far as the St. Jones River to the South and beyond Dover to the North.

The planes have been flying as low as 50 ft. over the countryside and in one evening, 750 gal. of spray were used. In some cases, the planes were flying so low they had to pull up to avoid hitting trees.

The Air Force spray work has augmented spraying by state planes and in Dover by truck sprayers.

Michigan State Has 'Do It Yourself' Weed Collection

EAST LANSING, MICH. — The "rogues gallery of weeds" at Michigan State University at East Lansing is a boon to the home-owner or farmer bothered with pesty weeds.

The Beal-Garfield Botanical Gardens at Michigan State is believed to be unique in the nation as the only one with a growing collection of all pernicious weeds of the U.S. George W. Parmelee, the curator, reports there are more than 150 species.

The university encourages home owners and farmers to visit the gardens with samples of the weeds causing trouble.

"Here is a do-it-yourself opportunity to match up the weeds with the labeled lineup at Beal Gardens," says Mr. Parmelee.

Many of the new organic herbicides are highly selective in their actions and to use them properly it is necessary in advance to identify the weed, the curator says. Although it's too late now to do much about that thriving backyard weed, Mr. Parmelee contends that now is the time to plan a more progressive campaign next year.

The weed collection is used extensively by vocational agriculture classes at the university and in Michigan high schools. The collection is divided into six categories based on the length of life, habitat requirements, and degree of persistence under cultivation.

Wisconsin Fertilizer Plant to Expand

GREEN BAY, WIS. — Northwest Co-op Mills has announced plans for a $425,000 addition to its fertilizer plant here, to include granulator facilities, increase output and provide additional storage capacity of 30,000 tons.

Construction schedules call for completion of foundations by Oct. 1. Erection of steel, for which contracts have been let, will follow and Feb. 15, 1956, has been set as target date for final completion of the building.

The new granulation plant, it was announced, will be equipped with the new TVA continuous ammoniator. It will process 15 to 20 tons per hour and operations are planned on a 24-hour basis.

HEADS SALES EXECUTIVES

WICHITA — Wesley H. Sowers, vice president of the Frontier Chemical Co., Wichita, has been elected president of the Kansas Sales Executives Club for the coming business year. The club has for its objective a better understanding of the selling profession.

liam R. Burgess Manage Midwest es for Simplot

CATELLO, IDAHO — The ap-ment of William R. Burgess as ger of mid-west sales for the izer division of J. R. Simplot as been announced here. Ben D. llum, Simplot sales manager, d that the action, in effect, estab- mid-west sales headquarters at ley, Colo., from which city Mr. ess will service the territory.

e new appointee was formerly ger of the Simplot Soilbuilders at Greeley. That position will be by Larry Schumacher who man- a branch unit at Swink, Colo.

. Burgess was born in Higham, . and was educated in Massa- tts schools. He worked for the nical Chemical Co. and the Coca Bottling Co. at Boston.

served in the Army during d War II, reaching the rank of r in supply. When he was sepa- d from the service, Mr. Burgess to work for the Food Processing sion of J. R. Simplot Co. at Cald- Idaho. He was later transferred he fertilizer division and became ager of the Greeley unit. Mr. ess is married.

w York Insecticide, ngicide Conferences heduled Nov. 8-10

THACA, N.Y.—The 17th annual York State Insecticide, Fungi- and Application Equipment Con- nces will be held here Nov. 8-10. ions will be in Bibbins Hall, G. Exchange, Terrace Hill.

he first two days will be devoted review of the highlights on re- ch and recommendations of in- icides and fungicides for New k state. Application equipment blems and developments will be sidered on the third day.

he conferences are a cooperative entation among Cornell's plant ology, agricultural engineering entomology departments here the divisions of entomology and t pathology at Geneva. A de- d program is being prepared for ing prior to the meetings.

oom accommodations can be ob- ed at Hotel Ithaca, Cornell Resi- ial Club of Ithaca, Hotel Clinton, ey Courts, Plaza Motel or at ist houses here. Limited accom- ations are available in Willard ight Hall and the Statler Club Cornell University. Those writing ls are requested to indicate the rvations are for the conferences.

Grasshopper unt High in Kansas

ANHATTAN, KANSAS — Field gins are harboring an unusual ber of grasshoppers this year, rding to Dell E. Gates, extension mologist at Kansas State Col- , Manhattan. Mr. Gates recom- ded that sprays or baits be ap- d before planting to wheat.

The weedy margins of fields are heavily infested with the large w differential grasshopper in ral Kansas counties," he said. me areas also have a recent hatch econd generation lesser migratory shoppers."

aring on Khapra etle Quarantine nned in California

ACRAMENTO — The California artment of Agriculture will hold blic hearing in Sacramento Sept. o receive evidence and testimony rding the department's proposal mend the present Khapra beetle ior quarantine.

J. Carey, deputy director of agriculture, will be the hearing officer. The department proposes to delete the provision in the quarantine permitting the issuance of permits for the movement of host material from infested properties without treatment for feeding purposes or direct planting.

Department officials said their Khapra beetle suppression program has progressed to a point where this provision is no longer necessary.

They said it also is necessary to modify the regulation to authorize the immediate release from quarantine of any property which has been fumigated by proven methods developed since the quarantine was made effective.

LOAN APPROVAL

WASHINGTON — The Fieldcrest Fertilizer Co., Madison, Minn., has been given approval for a business loan of $35,000 by the Small Business Administration, Washington.

Deep Tillage, Soil Fertility Program Started in Illinois

CARBONDALE, ILL. — A long range soils research program involving deep tillage and basic fertility treatment is being started at the University of Illinois-Southern Illinois University Cooperative Agronomy Research Center near Carbondale.

Dr. E. F. Sullivan, supervisor of the research center, says the general purpose of the experimental work is to study the comparative effects upon crop growth of deep and shallow tillages with fertilizer treatments of varying amounts. The plots received lime, phosphorus and potassium applied in quantities required to bring the soil up to a high level of nutrition as determined by soil tests.

Heavy bulldozers, earth movers and a deep-tillage disc plow were used to prepare the experimental plots. The experiment includes replications of four depth tillage treatments—nine inches, 18 inches, 27 inches and 36 inches.

Each of the depth plots is subdivided into areas receiving different concentrations of fertilizer. In each instance the soil was removed from the plot to the desired depth, mixed with the required fertilizers, and returned to the plot.

For example, the deep tillage plot in which the soil was cultivated to a depth of 36 inches contains sub-plots in which the fertilizer concentrations are those recommended for nine, 18, 27, and 36 inches of cultivated soil. The same amounts of fertilizer are repeated in sub-plots in each of the other three depth plots. Therefore, in plots having tillage to a depth of nine inches the fertilizer concentration is extreme in its sub-plot, receiving the same amount of nutrients as would be required for tillage at 36 inches.

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INSECT, PLANT DISEASE NOTES

Plant Diseases Appear For First Time in Virginia

BLACKSBURG, VA.—Some new troubles in the form of plant diseases have arrived to plague Virginia farmers. During the current season speck rot of potato showed up in Page County. The fungus and the disease caused by it have been reported previously in Virginia and apparently have been recognized only a few times in the U.S. The diseased potatoes from Page had symptoms similar to those of cold injury.

Downy mildew of small grains was found in Henrico. A single 37-acre field of river bottom land, which is subject to spring floods, and which was sown with a mixture of wheat, oats and barley, was infested. It is estimated that 40% of the grain was destroyed.

A field of Wong barley being produced as the first crop on cleared land in Bedford County contained patches of plants showing leaf spotting unlike any previously seen by VPI pathologists.

Two new tree diseases, yellow blister of Lombardy poplar and needle rust of loblolly pine, were found in Montgomery and Augusta counties, respectively. The particular fungus causing the needle rust was said to be known to occur in New Jersey and Georgia, but not previously in Virginia.

In addition to the diseases listed as being new to Virginia, soil-borne wheat mosaic was seen in Accomac County again in 1955. It was first reported there in 1954. Mosaic was present in the wheat yield tests at the Onley field station of the Virginia Truck Experiment Station both years, and was reported in Tetrapetkus and other rye varieties in 1955.

Wheat is not commonly grown on the eastern shore, but rye is grown there extensively as a green manure crop, and also in other parts of eastern Virginia. This probably accounts for the extreme severity of soil-borne mosaic in many fields of that section, agronomists said. Mosaic is known to occur in 12 other counties of Virginia.

Corn stalk rot was reported in Mathews County. Hybrids Ohio C and Southern States Pocahontas w attacked. No estimate of the da age is available at this time. Pre ously, this disease had been repor ed on corn in Arlington, Dinwidd Nelson and Northampton counties.

New Mexico Fights Varied Cotton Insects

STATE COLLEGE, N.M.—Cott bollworms have reached outbrea proportions in the Lordsburg a Animas Valley areas of Hidal County and in the Deming area Luna County, N.M. Infestations many fields run as high as 100 150 eggs and small larvae per 1 terminals. Infestations in Dona A and Eddy counties are light to heav depending on control measures.

Cotton fleahoppers are very abu dant in untreated fields in Ed County. Superb plant bugs are al very numerous in many fields Dona Ana County and are causi damage in badly infested fields.

Lygus bugs infestations in cott are light to heavy, numbering 0 18 per 100 sweeps in Dona Ana Cou ty. Thrips are heavy on cotton Eddy County, but no damage w apparent. Cotton aphids (Aphis go sypii) are light and spotty in cott in Eddy County.

Yellow clover aphids are show ing up in increasing numbers i Dona Ana and Eddy counties. Con trol measures are being taken i some fields in Dona Ana County Alfalfa caterpillars are numerou in alfalfa in DeBaca County, an adults are very abundant in field in Eddy and Dona Ana counties

False chinch bugs are very hea on grain sorghum in Curry Coun and spider mites are causing dama to field corn in Torrance and S Juan counties.

Tomato fruitworms are still ca ing severe damage to 200 acres tomatoes in Luna County.

Houseflies are very abundant feed lots, poultry houses, dairy bar and around residences in the Mesi Valley.—John Dunkin.

Boll Weevil Attacks Widespread in Georgia

ATHENS, GA.—Eighty fields in north Georgia counties were inspe ed for the weevil during the we and all were infested. Counts in fo untreated fields ranged from 63 82% punctured squares with an a erage of 71.5%. Counts in 76 treat fields ranged from 20 to 52% w an average of 30.7% punctur squares. Weevil migration is und way in north Georgia.

Terminal bud inspections for bo worms in 20 fields averaged 1.4 eg and 1.0 worm per 100 termina Bollworm-damaged squares averag 1% in the four untreated fields a 0.31% in the 76 treated fields.

Aphid infestations in the 80 fie were rated as follows: none, 25; lig 31; medium, 14; heavy, 10. Spid mite infestations in the 80 fields e amined were rated as follows: no 33; light, 21; medium, 15; heavy,

A report was received from a cou ty agent stating that an average 15 grown bolls per 10 feet of r had been destroyed by bollwor in one field in his county. This rep sents a loss of about $25 per acre a the worms are still at work.

Aphid and spider mite infest tions continue to increase and a capable of causing considerab damage in some fields. Both ca cause defoliation and the hon dew from heavy aphid infestatio can lower the grade of lint up which it falls.

The following statements are new but are particularly applica at this time of the season: (1) E weevils can destroy bolls until th are 21 days old. (2) Bollworms c destroy bolls until they are alm

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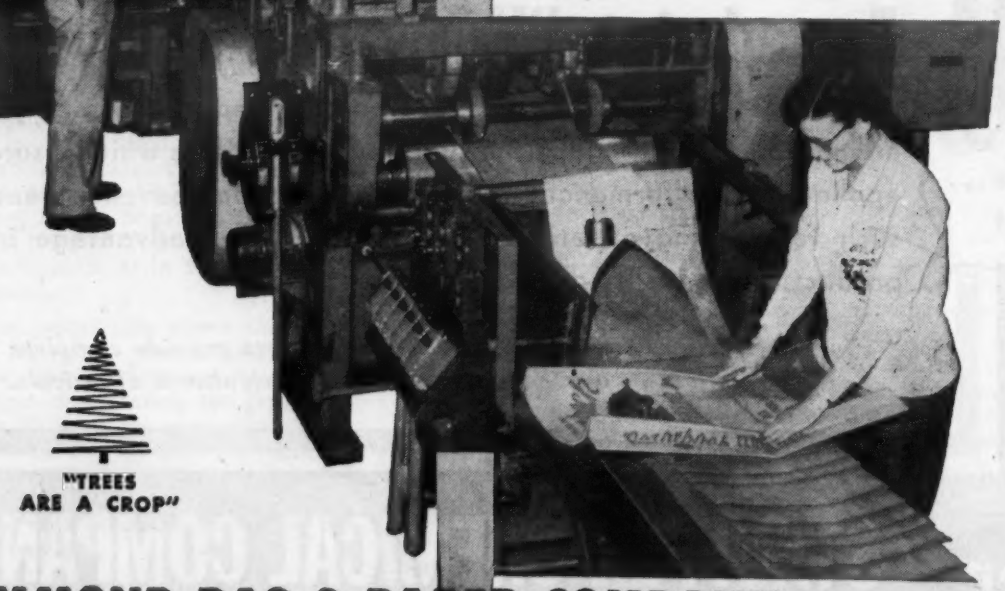

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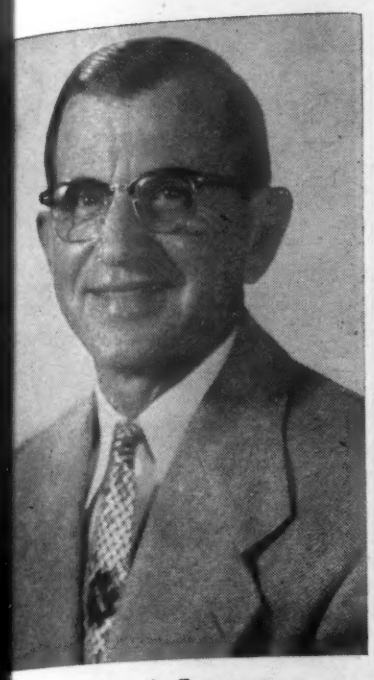


Paul A. Jones

ULCAN PLANT MANAGER—Paul Jones has been named plant manger of Vulcan Steel Container Co., rmingham, Ala. according to anuncement made by Gordon D. ck, company president. Mr. Jones s been in the drum and pail proction business for over 20 years. e will be in charge of all manucturing at the company's main ofe and plant in Birmingham. Vulcan eel Container Co. has just cometed the installation of a new pail oduction line and is now adding a w building which increases manucturing and storage area by over % to provide for the adding of ore production capacity for new zes of containers, according to Mr. nck.

eady to open. (3) Each additional oll saved per foot of row will pay e farmer about $16 per acre.—C. Jordan.

Missouri Bollworm Attacks Decrease

COLUMBIA, MO. — Damage from otton bollworm seemed to decrease omewhat last week in Missouri. ome damage is still occurring, however. Moths are still present and ggs are being deposited in most of he rank fields.

Some boll weevils are being found round the fringe of the Cotton Belt, ut not yet heavily enough to justify praying. Considering the entire eevil infested area, less boll weevils ere found at this time compared ith the past two or three years.

Local Kansas Areas Damaged by Hoppers

MANHATTAN, KANSAS — The id-summer adult grasshopper surey continued in Kansas this past eek. Population counts in north entral and in central Kansas counies ranged from non-economic to hreatening (localized areas). Localzed damaging infestations were oberved along the margins of some orn and alfalfa fields. Scattered inestations of economic importance ere also observed in some milo and orghum fields.

Grasshopper counts in field margins and fence rows ranged from 4 to 26 per square yard while field counts ranged from 2 to 16 adults per square yard. Recent rain showers in a few localized areas of central Kansas aided the hatching of lesser migratory grasshoppers. Counts of nymphs (second and third instar) ranged from 6 to 20 per square yard in a few alfalfa fields in southern Cloud County.

Yellow clover aphids were found n alfalfa in fields of Republic, Washington and Jefferson counties. This xtends the north and northeast disribution of this insect in Kansas. Counts ranged from 3 to 11 aphids per sweep (15-in. net). A red clover field in Atchison County that gave counts last week ranging from 20 to 180 aphids per sweep had a much reduced population this week. The numbers of predators had increased and were apparently holding the aphid population in control.

No corn earworm larvae were found feeding in sorghum and milo heads in any of the fields that were surveyed in the following counties: Washington, Republic, Cloud, Clay, Riley and Jefferson. Infestations in field corn ranged from 4 to 56% (ears showing damage) in these counties. Light trap counts at Manhattan, Riley County, showed a marked increase in moth populations.

Light to moderate infestations of garden webworms were observed in some of the alfalfa fields being held for seed in both north central and northeast Kansas. Larval counts ranged from 3 to 14 per sweep (15-inch net). Numerous moths were observed in fields of Jefferson County.

The tarnished plant bug, alfalfa plant bug, and the rapid plant bug are rather common in most alfalfa fields being held for seed in north central and northeast Kansas. Counts ranged from 3 to 14 per sweep in the more heavily infested fields.

No infestations of corn leaf aphids of economic importance were found in any of the fields of milo or sorghum that were surveyed. Localized infestations of minor importance do occur in a few corn fields of north central and northeast Kansas.

A survey of several corn fields in Jefferson County, northeast Kansas, showed that European corn borer infestations ranged from 4 to 24% with an average of two larvae (fourth instar) per stalk. No corn borers were found in any of the fields that were examined in Washington or Republic counties.—David L. Matthew.

West Virginia Faces Late Blight Attack

MORGANTOWN, W. VA. — Frequent rainfall in most of West Virginia during the past two weeks has increased the possibility of an outbreak of late blight in tomato plantings, cautions C. Frank Bishop, extension plant pathologist and entomologist at West Virginia University. Quite a number of growers have become lax in their spray or dust program and, as a result, early blight, nailhead spot, and anthracnose are now causing considerable damage to tomatoes, Dr. Bishop reports.

Boll Weevil Damage Continues in Louisiana

BATON ROUGE, LA. — Severely damaging infestations of boll weevil continued throughout Louisiana last week. Many growers have terminated applications of insecticides and some have begun applications of defoliants. Many fields need additional applications for the protection of bolls.

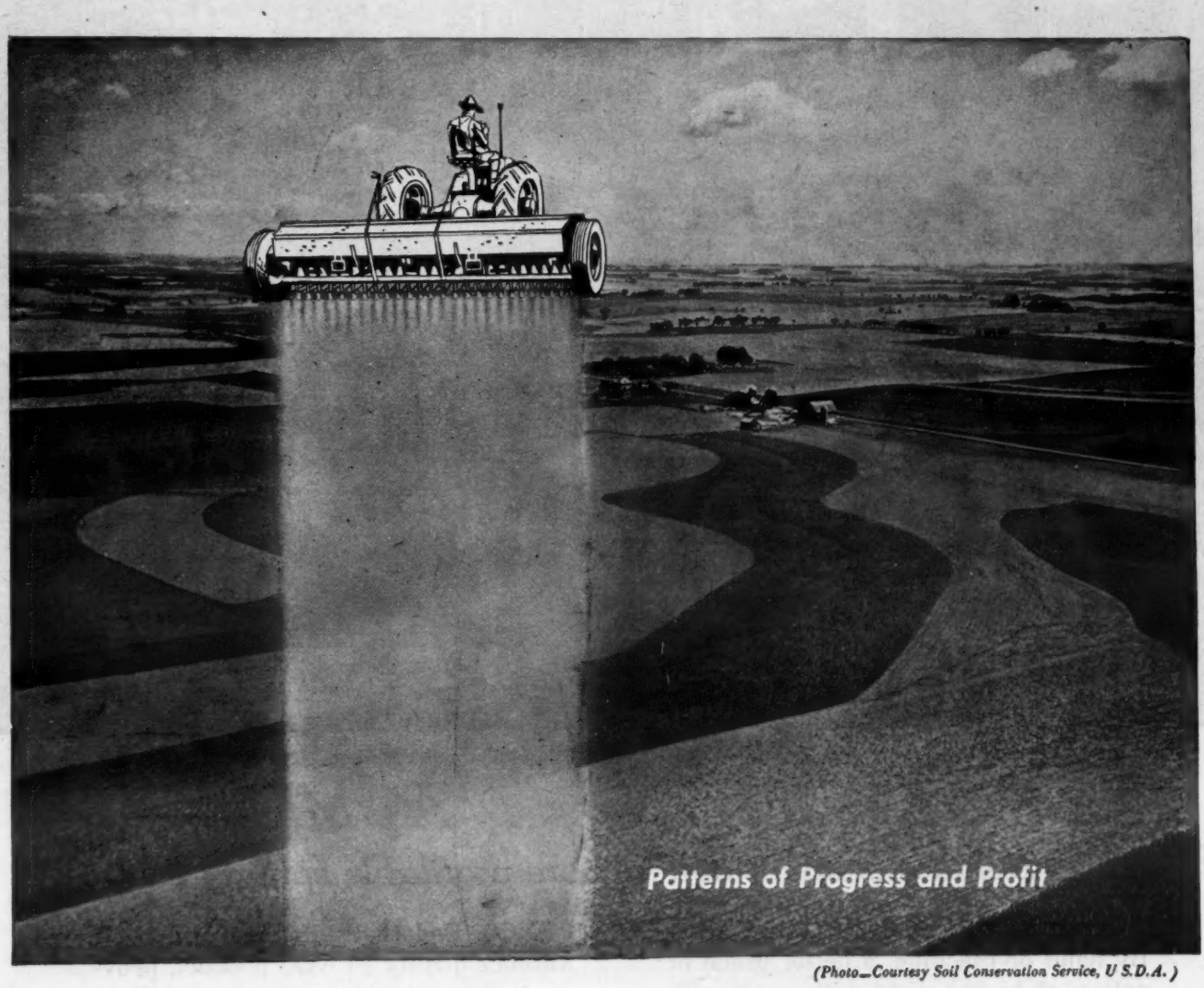
Of 111 fields inspected in the Tallulah area, all were infested. Infestation ranged from 1 to 10% in two fields, 11 to 25% in 43, 26 to 50% in 31 and over 50% in 35 fields.

Examinations of 103 fields in Avoyelles and Rapides Parishes, showed all were infested. Infestation ranged from 1 to 10% in seven fields, 11 to 25% in 12, 26 to 50% in 36 and over 50% in 48 fields.

A slight increase in number of bolls infested was noted during the week. A large increase in egg deposition was reported from the St. Joseph and Gilliam areas. Moth flights as reflected by catches in light traps continued to increase. Apparently so much insecticide has been applied for boll weevil control that damaging bollworm infestations have not been able to develop. Damage may still occur in fields where bolls are not fully mature.

DUSTER SURVIVES CRASH

WINCHESTER, KY. — John Day, 25, crop-dusting pilot, survived a crash of his light plane near here as it was spraying tobacco. Cause of the crash was not known. Mr. Day was listed in fair condition at a hospital. The plane was owned by Kentucky Aerospray, Lexington.



(Photo—Courtesy Soil Conservation Service, U S.D.A.)

High Grade Muriate of Potash

by DUVAL

Duval Muriate of Potash ranks high as one of the essential nutrients which greatly increase yield and profits in crop production.

DUVAL SULPHUR and POTASH CO.
Modern Plant and Refinery at Carlsbad, New Mexico

Address all communications to:
ASHCRAFT-WILKINSON CO.
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Russell J. Rowlett in New V-C Research Post

RICHMOND, VA.—Dr. Russell J. Rowlett, Jr., has been named assistant director of Virginia-Carolina Chemical Corp.'s research department.

Prior to joining the research department of this company in 1952, Dr. Rowlett was a research chemist for the E. I. du Pont de Nemours & Co., and served as associate editor of the Chemical Abstracts.

Dealer Sentenced for Misrepresentation of Agricultural Gypsum

SAN FRANCISCO — Misrepresentation of agricultural gypsum and failure to label each lot according to law have brought a suspended one year jail sentence to a dealer selling the mineral to farmers in Riverside County in southern California.

The salesman had previously received a warning, but had continued to violate the law, according to Allen B. Lemmon, chief of the Bureau of Chemistry of the California State Department of Agriculture.

Mr. Lemmon explained that the law which protects farmers in their purchases of agricultural minerals and commercial fertilizers requires each lot of material to be labeled to show the guaranteed percentage of agricultural mineral or plant food that it contains.

In the case of the guilty salesman, the dealer had made "repeated deliveries of agricultural gypsum in loose truck loads," officials said. He was placed on probation for three years with suspended sentence.

MOSQUITO OUTBREAK

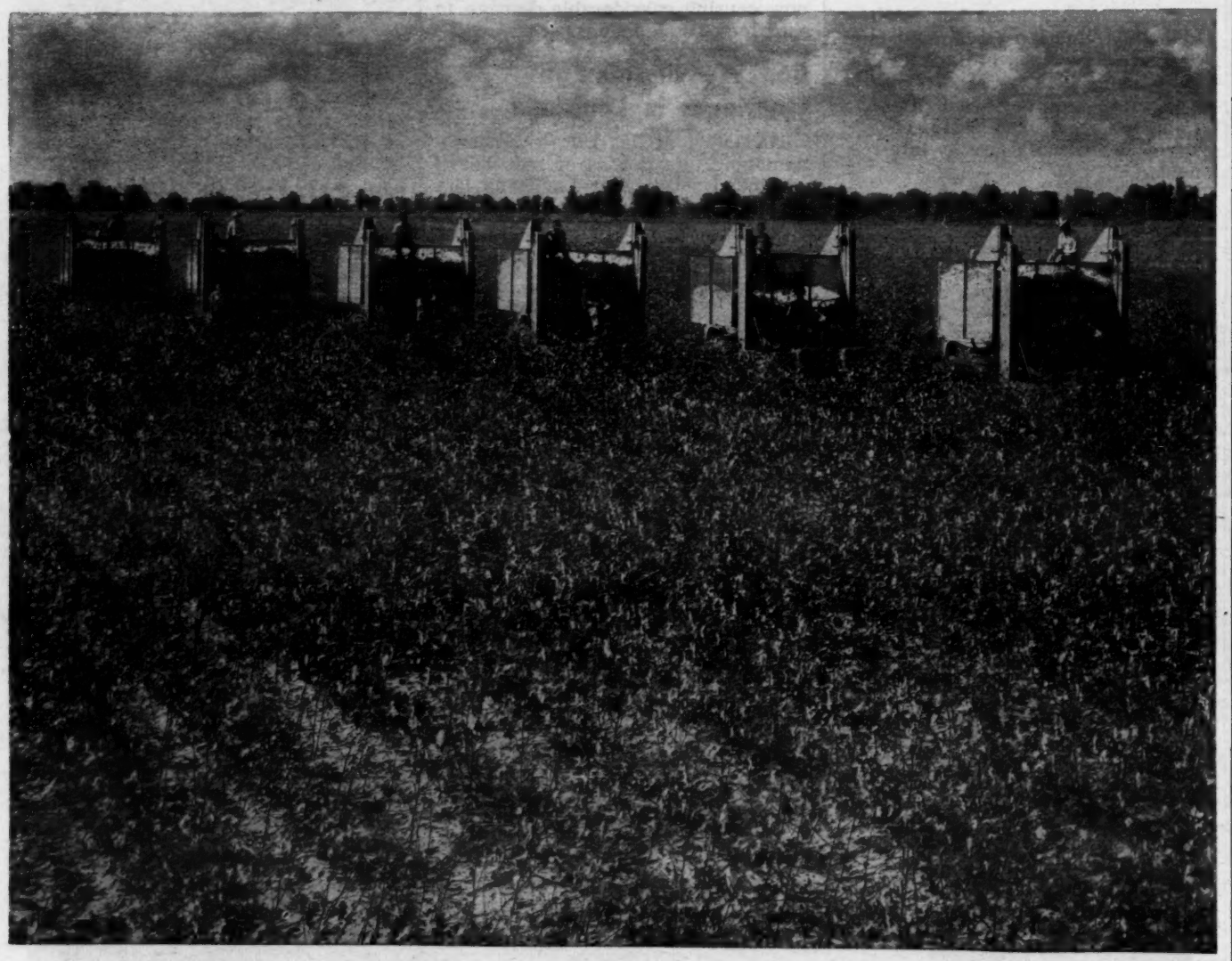
WILMINGTON, DEL. — A mosquito invasion, described by state officials and residents as the worst in memory, has struck the eastern side of Delaware. The pests, brought on by the August rains, are hampering industrial and outside household work.

Western Agricultural Chemicals Assn. Speakers Named

BERKELEY, CAL.—Three speakers are scheduled to address the annual meeting of the Western Agricultural Chemicals Assn. at Hotel Claremont here Oct. 11.

C. O. Barnard, executive secretary of the group, has announced that a meeting of the board of directors and a membership business meeting will be held from 8:30 a.m. to 11:45 a.m. A social hour will start at 11:45 a.m. and luncheon will be at 1 p.m.

Speakers after the luncheon will be Dr. Rosmarie von Rümker, director of research, Chemagro Corp., on "Inter-Relations Between Basic and Applied Research in the Development of Modern Insecticides," R. H. Rollins, assistant chief, Bureau of Chemistry, California Department of Agriculture, on "The Responsibilities of Pesticide Salesmen."



DEFOLIATION - - - A MUST!!

PENCO Defoliants mean better, more profitable cotton harvests!

You can recommend PENCO De-Fol-Ate By hand or machine, a better grade of cotton of higher yield will result with PENCO De-Fol-Ate — a magnesium chlorate-type defoliant! It's the leader, dependable, proven commercially on hundreds of thousands of acres.

PENCO De-Fol-Ate . . . dissolves quickly in water . . . saves time. Not acutely toxic or unpleasant to handle. Increases picking efficiency . . . causes bolls to open more uniformly. PENCO De-Fol-Ate . . . is available in convenient 50 lb. bags.

PENCO Endothal® Harvest Aid . . . Another quality PENCO product, proven to be a highly efficient defoliant under favorable plant and weather conditions. In certain areas, you will want to double check the advantages of this product. PENCO Endothal Harvest Aid, a liquid easily mixed with water, is available in five gallon cans and 54 gallon drums.

Service bulletins on these products are available on request.

PENNSYLVANIA SALT MFG. CO. OF WASHINGTON

Tacoma 1, Washington

Philadelphia 7, Pa. • Montgomery, Ala. • Bryan, Tex. • Aurora, Ill.
Portland, Ore. • Wenatchee, Yakima, Wash.
Los Angeles, Berkeley, Calif.

Pennsalt Chemicals

William F. Watkins

William F. Watkins New District Agronomis For Olin Mathieson

BALTIMORE — William F. W kins, agriculturist with the East Fertilizer Division of Olin Mat son Chemical Corp., has been nam agronomist for the Great Lakes s district with headquarters at Laf ette, Ind.

In his new position, Mr. Watk will provide advisory and resea services on agronomy in connect with the sale of Olin Mathies Ammo-Phos fertilizers, pesticid anhydrous ammonia and irrigat in the states of Ohio, Illinois, Mic gan, Indiana, Wisconsin and K tucky.

A native of Ohio and long-t resident of Iowa, Mr. Watkins joi Olin Mathieson in 1953. After years of practical farming, Mr. W kins attended Iowa State Colle He has a master's degree in agr omy.

After several years as agronom with Iowa State College, he joi the Soil Conservation Service Washington. For a time he was a culturist with the War Food Adm istration and the U.S. Departm of Agriculture, concerned in b positions with the requirements distribution of fertilizers.

Later he was chief, Fertili Seeds & Pesticides Branch of Food and Agriculture Division ECA, MSA and FOA, during wh time he served for more than a y as a fertilizer consultant to Eu pean governments.

Mr. Watkins is a member of American Society of Agronomy, Science Society of America, Soil C servation Society of America and Alpha Zeta, Delta Sigma Rho Gamma Sigma Delta honor societ

National Nitrogen Solutions Assn. Plans Oct. 13-14 Meeting, Show

SPRINGFIELD, ILL.—Officials the National Nitrogen Solutions A have reported that the date of group's meeting has been incorre listed and that the correct date Oct. 13-14.

The association will hold its meeting and equipment display the Illinois State Armory here those dates.

Firms wishing to obtain disp space should get in touch with F. Broyhill, Dakota City, Neb.

PLOWVILLE '55

ST. PAUL—Twenty better fa ing and conservation demonstrati will be shown Plowville '55 visito Sept. 16-17. Plowville '55 is on farm of the Trosviks, five yo bachelor brothers, near Roth Minn., in the Red River Valley. will discuss "Salesmanship."

onsanto Announces hanges in Organic les Executive Group

ST. LOUIS—Four changes of as- nment in the executive sales group Monsanto Chemical Co.'s Organic emicals Division have been an- nced by John L. Hammer, Jr., isional director of marketing.

Arthur P. Kroeger, a director of es, was appointed associate direc- of marketing for the division, a wly created position.

Cyrus W. Merrell, a director of es, was appointed assistant to the ector of marketing, also a newly eated position.

William M. Russell, director of es-operations, and Tullius C. pper, director of sales-planning, ll exchange duties, with Tupper as- ming the operational function and ssell taking the planning post.

All of the changes were effective pt. 1.

Mr. Kroeger is a native of Akron, io, and holds a B.S. degree in emistry from the University of kron (1931). He joined Monsanto in 29 in the company's rubber service partment at Akron. After assign- ents in San Francisco, Los Angeles d Japan, he was appointed assist- nt general manager of sales for the vision in 1945 and a director of sales 1953.

Mr. Merrell, a native of St. Louis, tended Cornell University. He ined Monsanto in 1935 as manager pharmaceutical sales and was ap- inted assistant general manager of les for the division in 1949 and a ector of sales in 1953.

Mr. Russell was born in Glasgow, cotland, and was reared in Flint, ich. He attended Michigan State ollege. Russell joined Monsanto at t. Louis in 1937 as a member of the avor and condiment sales group, ansferring to the Detroit office here he became branch manager in 45. After appointments as general anch manager at Chicago in 1949 d New York in 1951, Russell re- rned to St. Louis as a director of les in 1953.

Mr. Tupper is a native of Texar- ana, Ark., and attended Washington niversity. He joined Monsanto's eavy chemicals sales group at St. ouis in 1933. After five years of ilitary service, Mr. Tupper rejoined e company in 1946 at Cleveland be- oming branch manager there in 51. He was appointed manager of e division's plasticizer and resin les at St. Louis in 1952 and became director of sales in 1953.

entucky Fertilizer onnage Declines % in 1954-55

LEXINGTON, KY. — Fertilizer les in Kentucky during the year nded last June 30 totaled 524,488 ons, a decrease of 9% from the 77,929 tons sold during the previ- us fiscal year, according to the state epartment of Feed and Fertilizer. The 1954-55 total included 419,206 ons of mixed goods and 105,282 ons of materials.

Although the mixed fertilizer ton- age fell more than 30,000 tons from 53-54 to 1954-55, the total amount plant food sold in mixed goods was ly 4,000 tons less in 1954-55 be- ause of higher analysis goods.

Mixed grades relatively low in lant food fell off 27% in tonnage hen averaged together, while high- r analysis grades jumped an aver- ge of 42%.

SELLS BRINE WELLS

ST. LOUIS, MICH.—Michigan hemical Corp. and Standard Lime nd Cement Co. have announced the ompletion of a transaction whereby ichigan Chemical has sold to Stand- rd Lime its brine wells at its north- rn chemical plant at Manistee.

HIGHER PROFITS from fewer acres

Fewer acres can provide higher profits when the yield per acre is increased through good farming practices. Careful land management, choice of a high-quality seed, continuous weed, insect and disease controls are all very necessary. But, perhaps the most important practice is improving soil fertility. By following a recommended fertilizer and liming program, you will add what the soil requires in the correct amounts. You can increase yield per acre at relatively low cost by increasing your use of nitrogen. A good source of nitrogen in solid form is CSC Ammonium Nitrate Fertilizer.

CSC AMMONIUM NITRATE GIVES TWO-STEP ACTION

CONTAINS 33.5% NITROGEN

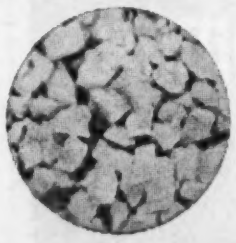
Step 1 QUICK-GROWTH

half of the nitrogen immediately available for rapid early growth

Step 2 SUSTAINED GROWTH

half of the nitrogen released slowly throughout growing season

CSC Ammonium Nitrate Fertilizer is guaranteed to contain a minimum of 33.5% Nitrogen. Two-step action is possible because this 33.5% Nitrogen consists of equal quantities of quick-growth nitrate nitrogen and sustained growth ammonia nitrogen. The illustration shows the exclusive actual size of CSC Ammonium Nitrate Fertilizer. It flows freely, spreads evenly, never clogs or sticks in the spreader. Low-moisture CSC Ammonium Nitrate is specially coated and packed in sturdy bags to prevent caking or lumping during storage. Spend your fertilizer dollar wisely—look for CSC's green and white bag the next time you buy fertilizer.



A Product of

Commercial Solvents Corporation

NITROGEN THE HEART OF THE HARVEST

Boosting YOUR SALES

THIS AD

and others like it are appearing in leading farm publications read by YOUR customers

How to make more money from every trip across your field . . .

Back and forth across your field, you travel nearly a mile to seed and fertilize an acre of grain. Yields depend on what your drill puts down. Many leading farmers have found that it pays to give grain 500 to 600 pounds of V-C Fertilizer per acre. A heavy fall application of V-C Fertilizer gives the crop a vigorous start of lush fall growth, helps it to resist winter killing and makes it stool out strong next spring with many sturdy stalks loaded with high-quality grain for harvest. It also helps you get a good "catch" of legumes. When you double or triple your yield of grain with V-C Fertilizer, you reduce your cost per bushel and greatly increase your profit per mile of labor and machinery.

See Your V-C® Dealer

Get the facts on the complete line of V-C Fertilizers. Ask about the extra crop-producing power and easy-drilling quality of V-C PROLIFIC, the fertilizer preferred by so many leading farmers. V-C PROLIFIC is a superior blend of better plant foods fortified with important minor elements lacking in many soils. V-C Fertilizers and V-C Superphosphates are made to fit the needs of your farm. Your V-C Dealer is a good man to know. He can help you make more money from farming. *See him today!*

IT PAYS TO BE A V-C DEALER!

VIRGINIA-CAROLINA CHEMICAL CORPORATION • RICHMOND 8, VIRGIN

Albany, Ga. • Atlanta, Ga. • Baltimore, Md. • Birmingham, Ala. • Carteret, N.J. • Cincinnati, Ohio • Columbia,
Dubuque, Iowa • East St. Louis, Ill. • Fort Wayne, Ind. • Greensboro, N.C. • Hopkinsville, Ky. • Jackson, Miss. • Memphis, T
Montgomery, Ala. • Norfolk, Va. • Orlando, Fla. • Richmond, Va. • Savannah, Ga. • Shreveport, La. • Wilmington,

Special Retail Section

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By AL. P. N
Croplife Spec

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Special Retail Section

Better Selling

Richer Fields for Dealers

A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

lorida Firm Tells Story of State's gricultural Growth in Series of Ads

By AL. P. NELSON
Croplife Special Writer

n excellent example of an insti- ional advertising campaign, featur- the agricultural advances of a te and region, and tied in with role of fertilizers and pesticides, s one which the Wilson & Toomer rtilizer Co., Jacksonville, Fla., be- n several years ago in southern rming magazines.

This campaign told the story of orida agriculture, its problems, ac- mplishments, winning of new mar- ts and the prosperity which such w markets have brought to the te. Prominent in every ad was the rt played by the University of orida Agricultural Stations in lead- farmers, cattlemen and growers achieve greater prosperity through ientific farming.

Most of the materials for the ads as taken from reports of the xperiment stations, and the copy leared by them. The commercial ngle of the ads was very minor s such—what was desired was to ell the story of Florida agricul- ure.

The response from all segments the field of agriculture was ex- llent on the series. Most certainly hat has been done in Florida in this spect could be done by fertilizer mpanies in many other states.

Published in farm magazines, as id advertising, these ads played an portant agricultural educational le and induced many farmers to try learn more about products which ill help them raise more crops at wer per unit costs.

In one such typical ad in a farm agazine, the Wilson & Toomer Fer- lizer Co. showed three scenes from lorida. One was entitled "unim- roved pine land," another "improved rass pasture," and another "im- roved clover pasture."

The copy then went on to say, 'What Your University of Florida Agricultural Experiment Stations Mean to You . . . How Playing Nurse- maid to Strange Grasses Paid Off in Better Pastures. . .

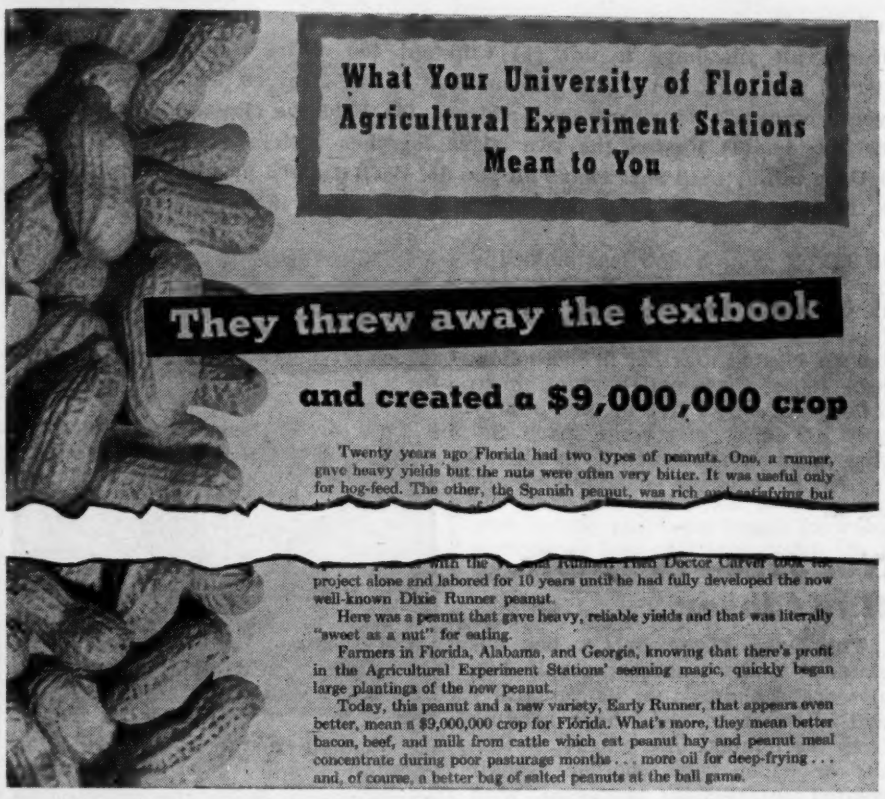
"Florida has always had plenty of rass . . . but not the kind that a eer could convert into pounds of nder beef or a cow could turn into ich nutritious milk.

"Grass really was a tough problem Florida, and not until it was licked ould Florida's beef and dairy in- ustries hope to flourish. Within com- aratively recent memory our pas- ures just weren't good enough to upport the proper number of the ight kind of cattle. It took the Uni- ersity of Florida Agricultural Ex- eriment Station scientists to solve he problem.

"And the solution wasn't easy. lorida has a variety of soils. These oils vary widely as to their nutrient ontent and mineral deficiencies. All his meant a lot of experimenting nd testing, devoted attention to the iniest details of grass development.

"In their endless experiments the cientists tested strange grasses with trange names from all over the lobe. Today, because the University f Florida scientists played their role

(Continued on page 12)


What Your University of Florida Agricultural Experiment Stations Mean to You
They threw away the textbook
and created a $9,000,000 crop
Twenty years ago Florida had two types of peanuts. One, a runner, gave heavy yields but the nuts were often very bitter. It was useful only for hog-feed. The other, the Spanish peanut, was rich and satisfying but
project alone and labored for 10 years until he had fully developed the now well-known Dixie Runner peanut.
Here was a peanut that gave heavy, reliable yields and that was literally "sweet as a nut" for eating.
Farmers in Florida, Alabama, and Georgia, knowing that there's profit in the Agricultural Experiment Stations' seeming magic, quickly began large plantings of the new peanut.
Today, this peanut and a new variety, Early Runner, that appears even better, mean a $9,000,000 crop for Florida. What's more, they mean better bacon, beef, and milk from cattle which eat peanut hay and peanut meal concentrate during poor pasturage months . . . more oil for deep-frying . . . and, of course, a better bag of salted peanuts at the ball game.

WILSON & TOOMER AD — The story of how University of Florida Agricultural Experiment Station scientists developed a new variety of peanut that would flourish in Florida soils is told in the above ad, one of a series run in farm papers by Wilson & Toomer Fertilizer Co., Jacksonville, Fla. This ad, like others in the series, stresses the story behind the college's research work and has a minimum amount of commercial selling copy.

SHOP TALK OVER THE COUNTER FOR THE DEALER

By EMMET J. HOFFMAN
Croplife Merchandising Editor

Soil thermometers used for advertising purposes are an important part of the merchandising program of the Rogers Delinted Cottonseed Co., Waco, Texas. The firm's experience with the soil thermometer might be of value to others who may be seeking a valuable and useful promotional tool for the months ahead. Now is not too late for organizing such a program so that the thermometers can be in the hands of farmers by planting time next spring.

T. W. Rogers, president of the Rogers Delinted Cottonseed Co., in commenting on a Croplife story on the use of soil thermometers by farmers who are irrigating in west Texas, said: "We would like to point out that the soil thermometer is being widely used by dry land farmers as well as those who are irrigating, as many times one or two days waiting can mean the difference of five degrees in the temperature of the seed bed which means the difference in a good stand or a poor stand.

"We use a soil thermometer for advertising purposes as we think soil temperature is one of the most important phases in the planting of all crops. Just thought you would be interested in knowing that many of the seed men in this part of the country are putting out these thermometers with the hope of making the farmer more conscious of soil temperature."

Offering of soil thermometers by Mr. Rogers' firm and by his fellow tradesmen in other areas is performing an important function in farmer education, as well as providing a clever business stimulant. Many factors contribute toward a good crop. There remain many farmers who are not aware that such things as adequate soil nutrients, weed control, proper soil temperature at seeding time, crop rotation, recommended seed variety and proper tillage are all necessary for consistently good crop production.

Untapped Market

Two out of three farm homes are supplied with household insecticides.

That is the finding of a Capper's Farmer survey on products sold by food stores. Capper's surveyed a section of its subscribers, one of its

(Continued on page 13)

By RAYMOND ROSSON
County Agent, Washington County, Tenn.

Slow down a bit, Bill. Now stop the car even with the fence. Fine. We all wondered what Old Timer wanted to stop for.

It was Wednesday afternoon and the women folks were attending a club meeting of some kind so the five of us happened to get together and we all agreed to take a spin on some of our good country roads.

We were riding a new 1955 model car. The driver represented an automobile dealer. On the front seat was the seed and fertilizer dealer. This county agent was on the back seat with a hardware dealer and a department store manager.

But getting back to the fence. "Boys, what do you see?" Old Timer asked. "Do you fellows see anything that affects your business, right now, or will affect it even more later?"

"Our business is in town and not way out here 12 miles from town," said the department store manager. "That's true," said Old Timer, "but what happens on either side of that fence will eventually have a bearing on your business on Main Street."

"Those are dairy cows and we don't handle milk," said the hardware man.

"Yes, that's true but you sell many items that milk can pay for," said Old Timer.

"For instance, the wonderful pasture on the right of the fence is capable of carrying a cow per acre, while the old sedge-grass, briar field on the left, well, it would take from four to eight acres to support a good milk cow," said this county agent.

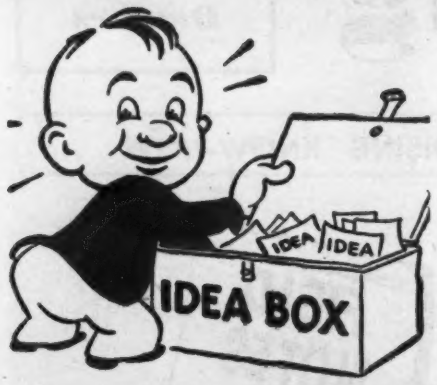
And we all began to watch fence lines. Then we started to count cows. One thing brought on another and we started to look for alfalfa fields and wondered if they made any difference in business.

"Yes indeed, gentlemen," said Old Timer. "It surely does make a difference and a big one." "Come to think of it, you seed and fertilizer dealers are perhaps a big help to the automobile business but I had never thought of it before," said the driver of the new car.

And we've wondered, Old Timer, why you've always boosted agriculture. We know now. "Why don't you go out with more business men and get them to look on each side of the fence?"

More Cotton

COLLEGE STATION, TEXAS — Application of nitrogen at the rate of 94 lb. an acre increased the yield of seed cotton 350 to 600 lb. an acre in tests conducted by Texas A&M in the El Paso Valley last year.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6305—Brush Control

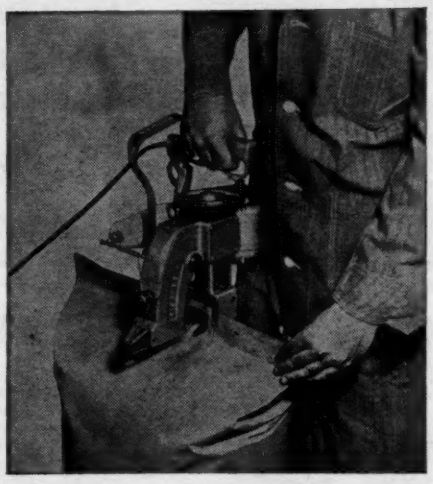
New details of the use of the product, "Telvar" W, are available from E. I. du Pont de Nemours & Co. The product is suggested for chemical control of trees and brush by soil application and present recommendations are for use in six states: Oklahoma, Texas, Kansas, Missouri, Arkansas and Louisiana. The company states that the product is one of its family of substituted urea herbicides and has been widely used as an industrial weed killer for several seasons. Secure more complete information by checking No. 6305 on the coupon and mailing it to this newspaper.

No. 5274—Pallet

The Bakelite Co., division of Union Carbide & Carbon Corp., has announced a new type of materials handling pallet weighing 28 lb. and molded of Bakelite polyester resins reinforced with Fiberglas to support 3,000 lb. of working load. Claimed to be resistant to oils, grease, acids and alkalies, the pallet has a surface that is easy to keep clean and sanitary by steam sterilizing at temperatures up to 325° F. Nine hollow legs molded in one strong piece with the platform they support are spaced to allow a four-way approach for fork lift trucks. Nested together in the hollow legs, 100 of these pallets stack up to a height of only 7 ft. 8 in., and occupy only 102 cu. ft. of storage space. Secure more complete details by checking No. 5274 on the coupon and mailing it.

No. 5280—Portable Bag Closer

The Dave Fischbein Co. has announced a new model portable bag closer and claims that its versatility will allow it to close bags ranging from the lightest to the heaviest textile or paper bag, whether asphalt treated or specially processed, with no change in parts or adjustments. The machine is electrically powered by a 1/12 h.p. motor and weighs 10½ lb., including full cone of thread. The new model is a refinement of the former model, the company announcement states. The bag closer is said to sew 40 ft. a minute, is light enough to carry with one hand and a light touch on the starting button puts it into action. The unit can also



be adapted for stationary use. A suspension unit is provided and a counterweight holds the machine at any desired height. Secure more complete details by checking No. 5280 on the coupon and mailing it.

No. 5228—Folding Curtain

The Bemis Bro. Bag Co. reports the development and production of its new product, BemisWall, a folding curtain designed for use as a retractable partition or wall. BemisWall is a high density curtain, heavily coated with a flame proofing resin on high grade jute, the company announcement states. It is formed into 7 in. panel folds, chain spaced to produce a voluted effect. The curtain is supported by steel top plates and operates on nylon wheels in an enclosed track. Several decorator colors are available. Installations are custom-made for each application and are useful in places where noise control is required, it is claimed. To secure more information check No. 5228 on the coupon and mail it to this publication.

Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 5250—Bag Closing Tape

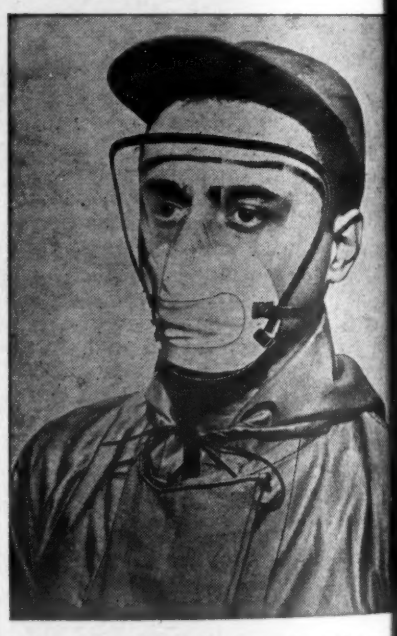
A new aid to those who store or handle products normally contained in multiwall bags has been announced by the Chase Bag Co. The inventory aid is a smooth-finish tape in a wide variety of colors, which is sewn across the bottoms of multiwall bags as a "closing" tape. In the case of sewn valve multiwall bags, closing tapes are used on both tops and bottoms of bags. The new colored tape called "Flattertape," is said to serve as a ready identification of the bag contents when bags are stacked and the printed surface of the bag is not visible. Other advantages claimed are the improved printing surface and the availability of colored inks to contrast with the tape. Natural kraft tape is also available in the same texture. The new tapes will be available for all customers who prefer them to the usual crepe-type tape. It was announced that the tapes will lower cost to the user. For more complete details check No. 5250 on the coupon and mail it to this publication

No. 6298—Lime Manual

A reference manual concerning the manufacturing processes, applications and specifications of lime and lime products has been announced by the Ohio Lime Co. The 28-page, 4-color book traces lime production from the open quarry where it is mined through various production processes to application and specifications that govern the correct methods of their use. Company officials say over two years were spent collecting, editing and producing the reference manual. The brochure is being distributed free of charge. Check No. 6298 on the coupon and mail it to this publication to receive it.

No. 5276—Face Mask

A General Scientific Equipment Co. announcement states that its "featherweight Lumarith plastic mask and cotton gauze filter are effective for numerous light dusts and chipping



hazards." It is said to protect the nose, lungs, face and eyes against nuisance dusts, chips and particles in all types of light, non-toxic work. The filter pad consists of cotton and sanitary gauze specially treated for softness and is replaceable. Extra filters are available. For more complete information and price quotations check No. 5276 on the coupon and mail it

No. 6299—Bulk Transport

The Henderson Manufacturing Co. has under production a bulk fertilizer delivery unit called the Henderson Chief Bulk Transport. Designed for one-man operation, the unit self-unloads into spreaders and also permits spotting the transport at any job, freeing the truck-tractor to pick up another transport load. The transports are available in lengths from 18 to 36 ft. A 14-ft. swivel conveyor swings in a 156° arc around the back of the transport. Advanced Hydra-Mech action raises, lowers or folds the conveyor vertically for over-the-road transport. The streamlined hopper is corrosion-resisting all steel

Send me information on the items marked:

☐ No. 5250—Closing Tape	☐ No. 6302—Defoliation
☐ No. 5228—Folding Curtain	☐ No. 6303—Chlordane
☐ No. 5274—Pallet	☐ No. 6304—Sprayer Finish
☐ No. 5276—Face Mask	☐ No. 6305—Brush Control
☐ No. 5280—Bag Closer	☐ No. 6306—Fall Fertilization
☐ No. 6294—Spreader	☐ No. 6298—Lime Manual
☐ No. 6296—Booklet	☐ No. 6299—Bulk Transport
☐ No. 6297—Chemical	☐ No. 6300—Catalog

☐ No. 6301—Checklist

NAME .....

COMPANY .....

ADDRESS .....

—CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL—

FIRST CLASS
PERMIT No. 2
(Sec. 34.9, P. L. & R.)
MINNEAPOLIS, MINN.

BUSINESS REPLY ENVELOPE
No postage stamp necessary if mailed in the United States

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Croplife

P. O. Box 67,

Reader Service Dept. Minneapolis 1, Minn.

ilded construction, with rounded nt, tarpaulin hooks and catwalk. ar feed gate opening is hydrau- ally operated. The entire door can o be swung open to handle other terials. The unit is equipped with 5 h.p. Wisconsin motor and extra- avy-duty chain (with oiler) to drive e conveyor belt. Check No. 6299 on e coupon and mail it to secure more mplete information.

No. 6306—Fertilization

A new booklet entitled, "Fertilize is Fall" has been prepared by the encer Chemical Co. The company tes that views on fall application fertilizer have changed and that thorities with few qualifications en- rse the fall use of nitrogen, phos- ate and potash. Dealers are urged "get into the act" and Spencer's w booklet gives some facts and gures concerning the effectiveness fall fertilization. Secure the book- t by checking No. 6306 on the upon and mailing it to Croplife.

No. 6304—Sprayer Finish

A new metal coating called finish X" has been announced by the O. W. romer Co. for use on Kromer prayers. The company announce- ent states that the finish is de- igned to prevent rust, corrosion nd pitting of tanks and to keep prayers from clogging. Prior to ap- lication of the finish to tanks and ooms, the surfaces are sandblasted hite and two coats of the product re applied, each coat being baked n at high temperatures. Further in- formation about the finish may be ecured by checking No. 6304 on the oupon and mailing it to Croplife.

No. 6301—Literature Checklist

The Diamond Alkali Co. has pub- ished a checklist of literature which t has published and is available to eaders. The list of literature on Diamond chemicals and their uses was first prepared for the company's ales staff but distribution has been expanded. The available literature ncludes reference manuals and hand- ooks, technical bulletins and data heets and product folders and leaf- ets. Secure the checklist by marking No. 6301 on the coupon and dropping t in the mail.

No. 6303—Chlordane

Chlordane promotion material in the form of consumer booklets is available from the Velsicol Corp., Division of Arvey Corp. One is a 12-page booklet on garden insect con- trol and another is a 16-page booklet on household insect control. Samples are available without charge. The backs of the booklets are blank for imprinting of a sales message. Secure more complete details by checking No. 6303 on the coupon and mailing it to Croplife.

No. 6302—Cotton Defoliation

The National Cotton Council has published a leaflet entitled, "Chemi- cal Defoliation of Cotton—1955 Prog- ress Report." The leaflet is intended to bring the basic defoliation guide first published in 1953 up-to-date by adding an analysis of the newest developments in use of harvest-aid chemicals for cotton. Among the topics discussed in the leaflet are amino triazole, defoliation vs. desiccation, defoliation following irrigation, boll rots and a chart of the various chemicals in use, together with the manufacturers' names and recommended usage. Secure the leaflet by checking No. 6302 on the coupon and mailing it to Croplife.

No. 6297—Chemical

Acetonedicarboxylic acid, a well-known, highly reactive chemical, is now available in pilot plant quantities by Chas. Pfizer & Co., Inc. Designated by the company as ADA, the compound is derived from fermentation-produced citric acid. A white crystalline powder of high purity, ADA is seen useful industrially for the preparation of insecticides, disinfectants, fungicides, dyestuffs, chelating agents, amino acids, leavening agents and as a synthetic intermediate. A comprehensive data sheet and samples are available upon request. Merely check No. 6297 on the coupon and mail it to this publication.

No. 6294—Fertilizer Spreader

The Simonsen Manufacturing Co. announces the production of a bulk fertilizer spreader designed for use on high analysis fertilizer. The spreader has stainless steel compon-

ents at various vital locations and employs stainless steel wire belt in conveying the fertilizer to the hydraulically operated distributing fan. Secure more complete information by checking No. 6294 on the coupon and mailing it.

No. 6300—Catalog

Antara Chemicals, sales division of General Aniline & Film Corp., has published an "Organic Chemical Catalog," which is one of a series of brochures describing Antara's products. The organic chemicals listed are produced in commercial or semi-works quantities. In the catalog's index, each product is listed alphabetically under its chemical abstracts name and most common synonyms. In the data section, the chemicals are alphabetically arranged under the designation normally used by Antara. The products are described, minimum standards governing shipment are set forth, and hazards, when present, are listed. A copy may be obtained by checking No. 6300 on the coupon and mailing it.

No. 6296—Chemicals Booklet

"The Story of the Chemicals You Live By" is the title of a 24-page booklet published by the Diamond Alkali Co. It outlines how the company's chemicals are used in the agricultural chemicals field as well as in other industries. A section is devoted to "plants on parade," and shows pictures of the various company plants. The "behind the scenes" section shows pictures and descriptions of how the chemicals are produced. Secure the booklet without charge by checking No. 6296 on the coupon and dropping it in the mail.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

USDA studies revealed that granular-type insecticides show promise toward control of European corn borer, and at the same time present less of a residue problem than do other kinds. . . . The greatest potential for both pesticide and fertilizer sales lies in the north central states, USDA studies indicated. This area produces a major portion of nation's agricultural output.

Flood damage in the northeastern states was calculated in billions. Hurricane "Diane" brought winds and rains that ruined crops, killed livestock and devastated whole areas of New England. Flood insurance was reported to be practically non-existent, thus adding to the difficulties of both farmers and businessmen. . . . A European chafer quarantine was applied to include parts of Connecticut, New York and West Virginia. . . . Grace Chemical Co. named John B. Pitner as head of its Agricultural Service Dept.

Velsicol Corp., Chicago, named C. E. Campbell as its representative in the Washington, D.C. area. . . . Pacific Coast Borax Co. named two additional salesmen: J. S. Gowland and Elmer H. Schmierer. . . . E. I. duPont de Nemours & Co. of Canada also announced sales appointments. Merle E. Ward moves from Montreal to Toronto; L. A. O'Neil, from Ontario to Alberta and British Columbia; and G. H. S. Malcolmson moves from Alberta to London, Ont. One new representative was appointed: A. A. Appleton who will operate in Eastern Ontario and Quebec.

According to a report by the U.S. Bureau of Mines, the phosphate industry faces a good future in both demand and output potentials. A continual rise in use has been noted for many years. . . . The American Society of Agronomy met at Davis, Calif., Aug. 15-19 and heard many papers on crops and soils research. New president elected was Dr. Iver Johnson, Iowa State College.

Davison Chemical Corp. announced that it would take over the manufacturing work of A. F. Pringle & Co., Charleston, S.C. . . . Alabama By-Products Corp. appointed C. A. Graft as service and sales engineer at Birmingham. . . . Richard M. Young, Jr., became assistant sales manager of Ultra Chemical Works, Inc., Paterson, N.J.

U.S. Rubber Company's Naugatuck (Conn.) plant was damaged in recent floods, but the company announced that it had stocks on hand for immediate deliveries. . . . Fertilizer sales in California showed an increase of 21,000 tons in the second quarter of 1955. Sales during April, May and June, this year, totaled 320,702 tons. . . . Korea received authorization for $9 million for fertilizer materials. Grant was made by the International Cooperation Administration. Sources of the material will be world-wide.

Don Paarlberg, USDA economist, took initiative to refute talk about a "farm depression." In a speech made in New England, he brought out facts and figures indicating that farmers are not slipping in net income.

U.S. Department of Commerce reports that the farm chemical industry is in good condition, based on relatively low inventories in the face of record production. . . . Two phosphate plants, those of Virginia-Carolina Chemical Co. and Armour Fertilizer Works, reopened at Lakeland, Fla., following settlement of wage dispute which had closed the operations since June 1.

Diamond Black Leaf Co. moved to Cleveland, Ohio, from former office in Richmond, Va. . . . McLaughlin Gormley King Co., Minneapolis, announced the opening of a New York office as part of its expansion program. Nathan D. Froot will head the branch.

Russell B. Stoddard and R. H. F. Dade were named to new positions by Food Machinery and Chemical Corp. Both are associated with the Fairfield Chemical Division. . . . Phytopath group and Ohio Pesticide Institute met at Wooster, Ohio for three-day meeting. . . . H. H. Allen, retired executive of Bemis Bro. Bag Co., died Aug. 13; and Dr. William Hale, farm chemurgy exponent and formerly Dow Chemical Co. executive, died Aug. 8.

USDA hinted that because of a larger-than-expected cotton crop this year, further acreage reductions may be necessary, effective next season. A total of 17 million acres may be planted, as compared to 18 million this year. . . . The Food and Drug Administration reported that chemical firms have a tendency to request tolerances higher than may be allowed safely.

Shell Chemical Corp., New York, announced a reduction in the price of its soil fumigant, D-D, from $1.20 a gallon to $1. . . . Strikes against Heyden Chemical Co. and American Agricultural Chemical Co. were ended on Aug. 8.

Gen. J. E. Hull, USA, retired, was elected president of the Manufacturing Chemists' Assn. He had served in the U.S. army for 37 years, holding many responsible posts.

Lion Oil Co. reported a gain of 29% over the first half of 1954. Income for first six months of 1955 was $7,816,987 as compared to $6,067,300 last year. . . . Dow Chemical Co., Midland, Mich., also reported a new sales record for its 1955 fiscal year. The new figure was $470,742,000 as compared to sales of $428 million made last year.

Food and Drug Administration assigned tolerances to two pesticidal materials, heptachlor and captan. Residues of 0.1 and 20 ppm respectively, were allowed. . . . An opportunity for added sales volume was seen in the cotton acreage allocation situation. Some 18 million acres of cotton are expected to be planted for next season.

FARM SERVICE DATA
Extension Station Reports

The use of treated seed is essential for good stands, healthy plants, and high yields of fall-planted crops. In planting oats, wheat, rye, barley, and fescue grass, benefits from the inexpensive treating of seed are sure to make treatment worthwhile.

According to Ralph R. Jones, Alabama Polytechnic Institute, Extension Seed Crops marketing specialist, fungicides used to treat these seed destroy seed-borne fungi that cause plant diseases. These chemicals also stop the action of soil infesting fungi that rot seed or kill young plants. By fostering healthier plants, fungicides improve crop stands, thereby helping to control weeds, and increase the amount and quality of yields.

★

If farmers aren't using superphosphate or gypsum in their fertilizer program, they probably have crops on a starvation diet as far as sulphur is concerned, says Dr. Joseph Neller, Florida Agricultural Experiment Station soils chemist.

This omission is serious, he says, for plants need large amounts of sulphur for proper growth. For example, adequately fertilized clover needs about the same amounts of sulphur and phosphorus.

★

Applications of 60 lb. nitrogen as ammonium nitrate increased seed cotton yields approximately 400 lb. per acre in a test conducted at Bakersfield, Texas in 1954 by Texas A&M College.

★

The favorable growing season plus applications of fertilizers, especially potash and borax, are producing big crops of alfalfa hay in Mercer County, Ky., according to W. B. Howell, county agent. Many farmers top-dressed their fields after the first or second cutting, applying about 200 lb. an acre of 60% muriate of potash plus 15 to 20 lb. borax.

Mr. Howell says about one farmer in 10 sowed soybeans for an emergency hay crop, most of them sowing eight to 10 acres. Most farmers applied 150 to 200 lb. an acre of muriate of potash to their soybean land.

★

Corn worms are being controlled on Rio Grande Valley cornfields by the use of DDT, says Doug Bryant of the Lower Valley Experiment Station. A 10% DDT dust or a 5% DDT in mineral oil have given good results.

To apply the mixtures properly, Bryant suggests that farmers start poisoning the second day after the corn silks come out, and continue at two-day intervals until the silks turn brown.

★

Research workers at the Angleton, Texas, Experiment Station have found that tillage of any sort favored the growth of ragweeds and had no beneficial results on maintaining pasture. The application of phosphate increased the percentage of white clover in the pasture mixture and nitrogen in addition increased the percentage of Dallisgrass and decreased the clover. Potash had no effect upon the plant composition of the Angleton Station pasture.

Where tillage was not involved, there was no difference in yields due to fertilizer placement. Disking or rotary tilling or placing the fertilizer below the surface gave lower yields and disturbed the root systems which were found to be very extensive in the top two to three inches of soil. The use of phosphate and nitrogen gave the best yields in the three-year tests.

Radioactive phosphorus was used to measure the uptake of phosphorus by both Dallisgrass and white clover. Here again broadcast phosphate was utilized more efficiently than was phosphate placed in bands two inches below the surface and seven inches apart.

★

The financial situation of many Louisiana dairymen and beef cattle owners next year will depend to a considerable extent on the amount of winter pasture planted in the next three months, says R. A. Wasson, agronomist with the Louisiana State University Agricultural Extension Service. A good winter pasture means cheaper winter feed for dairy and beef animals, Mr. Wasson says.

An acre of well-fertilized and well-managed winter pasture should produce 600 to 800 lb. protein, says Mr. Wasson. The pasture should provide grazing for at least three adult animals on each two acres for about 100 days, usually from December through February. In the spring, the animals can be turned on permanent pasture and the remaining growth of the winter crops can be used for silage or hay.

★

Mississippi farmers are showing a lot of interest this year in planting alfalfa, according to W. R. Thompson, extension pasture specialist.

While alfalfa costs a little more to grow, it will grow more feed per acre than any of the other hay crops and the hay is of higher quality and higher feed value, he stated.

General fertilizer recommendations for alfalfa in the hills section of the state are 500 lb. superphosphate, 200 lb. potash and 30 lb. boron per acre. These should be applied at time of planting. "The alfalfa should then be top dressed with potash and phosphate several times a year following hay cuttings," the specialist said.

★

Heavy cuttings of alfalfa hay may cause some farmers to overlook the need for top dressing with fertilizer, notes George D. Corder of the University of Kentucky Agronomy Department. It is recommended that an application of 60 lb. phosphoric acid and 120 lb. potash an acre be made annually.

Mr. Corder said, "The foregoing application can be made by using 600 lb. 0-10-20 per acre; however, this fertilizer is not available in all parts of the state. In this case, an application of 600 lb. 0-20-20 per acre or its equivalent can be made one year, and 200 lb. 60% potash per acre the next year. A two-year supply of phosphate can be made at one application, but it is best to apply potash every year.

"An application of 20 to 30 lb. borax per acre in alternate years or half this amount every year should be made."

Cash Discount Encourages Early Buying Of Fertilizer, Virginia Cooperative Finds

By AL. P. NELSON
Croplife Special Writer

Southern States Suffolk (Va.) Cooperative encourages early fertilizer buying with a special cash discount as the fertilization season approaches.

Paul Humphrey, assistant manager, reports that this plan appeals to many farmers who have the cash to buy and the storage facilities for the fertilizer.

"There is no way for the farmer to make more money any easier than to buy his fertilizer earlier at a favorable price," Mr. Humphrey says. "Then he can get the type he wants and haul it home at a time of the year when he is not overburdened with planting chores. We think this is a good way to get fertilizer moving to the farmer early in the season, rather than having orders bunch up when actual field work begins."

Special discounts for fertilizer purchased in fall and stored by the farmer until spring are also given, and this stimulates early buying. Early fall buying has also induced some farmers to use fertilizer in fall.

Much of the fertilizer sold here is 2-12-12 analysis and is used principally on peanuts. Mr. Humphrey reports that many peanut growers are also using cover crops for peanut ground and this means more fertilizer used.

An important phase of this firm's merchandising program is that the management encourages farmers to come here and talk over their farm problems. When peanut farmers gather at the store, the talk eventually goes to the price of peanuts and what types of fertilizer worked out best for them.

While this writer visited this firm, one farmer told a group of other interested neighbors that he used a 3-9-12 fertilizer for his peanuts at about 400 lb. per acre. He said that he had 24½ acres of peanuts and that he harvested 623 bags of peanuts from that amount of land. He said that he had found that peanuts require less nitrogen and lots of potash.

Naturally, conversations like this in a store turn the farmer's mind to a consideration of the fertilizer to use and it helps to promote the sale of it. Mr. Humphrey reports that many farmers like to stand around and discuss fertilizers and pesticide controls, etc., and that the management joins in on the conversation whenever the opportunity presents.

"We find that this is an excellent way to conduct farmer educational work," says Mr. Humphrey. "Farmers like informal discussions. Some may last a half hour or more, and every customer who comes in generally listens in on what is being said."

Sulfur preparations are used quite extensively by peanut farmers in this region to control peanut leaf blight. This store has a large stock of insecticides, fungicides and sprayers and displays them very well. The display room is about 15 by 20 ft. with neatly arranged wall shelves which bring the merchandise out into the view of most of the traffic. The store also handles feeds and general farm supplies, including motor oil, some hardware, tires and antifreeze. Fertilizers get a great deal of publicity on the firm's building signs, trucks and in its advertising.

The firm also has a field representative who visits farmers regularly and discusses fertilizer needs with them. This individual survey type of work pays off very well, reports Mr. Humphrey, for farmers are more willing to talk about problems when visited at their farms, than they are when they come to the store.

FLORIDA DEALER

(Continued from page 9)

as nursemaids to strange grasses so well, Florida is a giant checkerboard of rich pastures. A quart of rich Florida milk on your doorstep, the choice cuts of tender beef in your market, the lawns, parks and parkways of your state all attest the importance of the redoubtable achievements of these men . . ."

Other ads in this series included information on the development of Florida sweet corn from "almost nothing to a $8,000,000 a year crop in less than ten years," the development of the citrus industry, control of insects on crops, and the creation of a giant peanut industry.

With more of this type of publicity in farm papers throughout the nation, farmers would soon learn more about the cooperation of agricultural experiment station scientists, fertilizer manufacturers and dealers to bring products to the farmer which help him meet the challenge of this economic age.

High Analysis Fertilizers Popular With Kentucky Farmers

LEXINGTON, KY.—Sale of mixed fertilizers with more units of plant foods are increasing rapidly in Kentucky over straight materials and those having fewer units of plant foods, according to Bruce Poundstone, head of the feed and fertilizer department at the University of Kentucky Agricultural Experiment Station.

He cited the case of 5-10-15 which was unheard of in the state five years ago, yet today is the leading fertilizer with 70,000 tons sold. The second most important grade, 3-12-12, with 63,000 tons sold, has more than doubled its tonnage sale.

Grades formerly important, but now not recommended, have shown a rapid decline. For example, grade 6-8-6, which at one time sold close to 100,000 tons per year, is down to less than 40,000 tons, he reported.

Mixed fertilizers accounted for less than 70% of total sales five years ago, Mr. Poundstone said, but now have been upped to 80%.

Records further reveal that fertilizer grades recommended by the experiment station are more popular with farmers than grades not listed. Seventy percent of the fertilizer bought by farmers the past year was of grades on the station's recommended list. This is in contrast to only 10% in 1948.

Florida Corn Plots Produce Big Yields

EVERGLADES, FLA. — Corn fertilizer test plots in Collier County, Fla., planted last February yielded up to 85.7 bu. of corn per acre, says D. W. Lander, county agent. Yields from the total test plots—more than 50 acres—will be used for a cattle feeder demonstration.

TEXAS LAND PRICE

COLLEGE STATION, TEXAS—Average value of Texas farm and ranch land rose 2% during 1954 to a record $70.20 an acre.

itrogen Key to igher Corn Yields exas Tests Find

ASHINGTON — Research at the Department of Agriculture's cklands Experiment Station, Tem- Texas, showed nitrogen is the to higher corn yields—that these -yielding deep clay soils of this a could be producing 50 bu. of n per acre.

tation superintendent R. M. Smith his associates found that the soils e ample potash and trace ele- nts, but not enough phosphorus. st crops respond well to yearly treatments with 30 to 60 pounds P_2O_5. That still leaves nitrogen to accounted for.

re nitrogen fertilizers necessary en corn is grown continuously on same land? Can nitrogen-fixing etclover grown in rotation with n provide enough of this important nt food? Four years of plot and d trials apparently answer "yes" both questions.

On continuously cropped corn nd, the application of 30 to 90 lb. trogen per acre increased yields 10%—from 38.8 to 42.9 bu.

he Temple researchers gained er significant information about n's need for and use of nitrogen analyzing corn leaves for their rogen content.

etting 3% nitrogen as the approx- te critical level for plant response, researchers found ample nitrogen he leaves of all young corn—even t grown on continuous corn land. rogen shortages began to occur corn reached full tassel.

Then, when this plant food was st needed, its level dropped to % in leaves of corn on continuous- cropped soil, slightly below 3% corn on sweetclover land.

itrogen fertilizer at the 90-lb.- acre rate on continuously cropped d increased leaf nitrogen to 2.89%. it took nitrogen plus supple- tal irrigation water to reach 3%. itrogen fertilization of corn on etclover land boosted content at tassel stage to 3.12%.

rtilizer Increases rain Forage Yields Texas Experiments

OLLEGE STATION, TEXAS — in sorghum fertilizer tests were ducted by Texas A&M College ng 1952-54 on Bell clay and Hous- Black clay soils near Thrall and rrigated bottomland near Rogers. hosphoric acid alone or in combi- on with nitrogen significantly in- sed yields in the tests near Thrall. lower rates of N were as ef- ve as the higher rates. Nitrogen otash alone did not increase grain ds. The best treatment on the clay was 15-30-0 and on the ston Black clay 0-30-0.

n the irrigated bottomland, N or alone or in combination signifi- ly increased yields in 1953. The ds were erratic in 1954 but were eased significantly by 90 lb. N e and by all of the treatments in h both N and P_2O_5 were applied. most economical treatment was 5-0.

N. Y. OFFICE MOVES

EW YORK — Chemical Enter- es, Inc., has announced that it ow located at a new address: n 850, Lincoln Bldg., 60 East St., New York 17, N.Y. The hone number is MUrray Hill 5.

OVER THE COUNTER

(Continued from page 9)

questions being, "Do you buy household insecticides?"

Subscribers who said they did totaled 1,146 (67.9%), while those who did not totaled 541 (32.1%).

3-State Broadcast

Brea Chemicals, Inc., has added a radio information program for its customers and prospects in three western states. The company sponsors an 18-station news broadcast over the Mutual Don Lee Radio Network in three western states.

As part of this manufacturer's promotional program to farmers, the subsidiary of the Union Oil Company of California is sponsoring veteran farm news reporter, Henry Travis, on stations in California, Oregon and Washington every Saturday morning.

Currently Mr. Travis is offering product bulletins on Brea's liquid fertilizers, as well as technical service reports and information on application rates, methods and yield results for different crops.

GOOD CONTROL

COLLEGE STATION, TEXAS — Aldrin, lindane and heptachlor gave good control of the false wireworm at the rate of 2 oz. per 100 lb. sorghum seed in the summer of 1954 at the Amarillo Experiment Station of Texas A&M College.

New Practice to Help Farmers Buy Fertilizer

BATON ROUGE—A new practice added to the Louisiana agricultural conservation program will enable eligible farmers to receive cost-sharing payments for fertilizer and seed on their entire acreage of winter cover crop planted on land that was in cultivation this year, according to C. E. Slack, state administrative officer for Agricultural Stabilization and Conservation Committee.

Formerly, cost-sharing payments from the ASC were available only for any acreage of winter cover crops planted in excess of the average acreage on the farm for the past three years.

Here's another way
LION IS HELPING YOU
sell more Nitrogen Fertilizer

Impressive, Big-Space Advertisements are Appearing Month-After-Month in all These Publications

Lion's Chemical Sales Division is working to make sure you sell more fertilizers. One way we help is by *consistent advertising* to farmers. This advertising emphasizes how plant foods can best serve the farmer by increasing his profits.

As for *quality*, you can build your own reputation on a solid basis when you depend on Lion, a leader in the field of petro-chemicals. You can depend on Lion for *uniform high quality* . . . always.

With two giant chemical plants producing around-the-clock, throughout the year, Lion, with its versatile and flexible manufacturing processes, is a dependable source of the most popular and economical types of nitrogen fertilizer materials.

It will pay you to feature and sell nitrogen fertilizers with the Lion emblem on the bag, or Lion's anhydrous ammonia. They sell easily, make consistent profits for you.

Look To LION—A Leader in Petro-Chemicals—For Nitrogen Fertilizers

Lion Anhydrous Ammonia • Lion Ammonium Nitrate Fertilizer • Lion Aqua Ammonia • Lion Nitrogen Fertilizer Solutions • Lion Sulphate of Ammonia

DISTRICT SALES OFFICES:
NATIONAL BANK OF COMMERCE BUILDING, NEW ORLEANS, LOUISIANA
SHEPHERD BUILDING, MONTGOMERY, ALABAMA

WORLD'S LARGEST MANUFACTURER OF PRILLED AMMONIUM NITRATE

LION OIL COMPANY
CHEMICAL SALES DIVISION
EL DORADO, ARKANSAS

if your product is marketed through distributors and dealers . . .

Croplife is for YOU!

AN IMPORTANT EXCLUSIVE is available to advertisers whose agricultural chemical products are marketed through distributors and dealers. It is Croplife's unique *regional crop-area circulation plan,* carefully developed to fill an urgent need in the industry's marketing and advertising facilities—the need of advertisers to reach the dealers and distributors and farm advisers with an up-to-date story of their products and their consumer promotion plans.

THIS IS THE PLAN: In addition to the weekly circulation to manufacturers and formulators, Croplife is distributed on a regional crop-area basis to the dealer-distributor-farm adviser segment of the industry. The merchandising section in each issue of Croplife is specifically edited for dealers in one specific region. This carefully planned editorial formula insures intense reader interest.

More than 11,000 DEALERS, 1,700 custom operators and 1,000 farm advisers receive the issue of Croplife specifically edited for their regional crop-area once each four weeks. The mailing schedule for this group covers consecutively four geographic regions of the United States (see map) with one of four regional dealer issues: The Northeast Dealer Issue, the South Dealer Issue, the Midwest Dealer Issue or the West Dealer Issue. Each week Croplife goes to more than 3,500 dealers, distributors and farm advisers in one of these four regional crop-areas.

THIS CIRCULATION EXCLUSIVE is available only through Croplife. The regional crop-area circulation to dealers has been carefully developed to fit the particular needs of the agricultural chemical industry. Many individual products have been developed and approved and are being sold for use on a specific crop; therefore, marketing and promotion plans must be directed specifically to the appropriate crop-area. Croplife's dealer circulation developed along crop-area lines offers advertisers the *most flexible medium possible,* designed to give "direct-hit" coverage for specific messages without the higher cost of a larger-than-necessary circulation on an inflexible nationwide basis. Advertisers interested in reaching dealers in more than one region can do so easily and economically with a selective advertising schedule.

In addition to its national coverage, Croplife offers a selective regional circulation plan in these crop-areas

HOW TO USE THE PLAN: Select the regional crop-areas—Northeast, South, Midwest or West—in which you need to reach dealers, distributors and farm advisers with the up-to-date story of your products and your consumer promotion plans. Plan your message to inform and to educate this group. Then, select the appropriate issues of Croplife to carry your advertisements. Croplife's printed circulation statement outlines the four regional crop-areas in detail and gives the issue-by-issue mailing schedule. Ask us for a copy.

AND SOON—4000 additional selected dealers will be added!

BEGINNING IN JANUARY this important circulation exclusive becomes even more valuable to advertisers who are reaching dealers through the pages of Croplife. An additional 4,000 selected dealers handling agricultural chemicals will be receiving the issues of Croplife edited specifically for their crop-areas. One thousand dealers in each regional area have been screened and verified and will be added to Croplife's controlled circulation plan, bringing the total number of dealers, distributors and farm advisers receiving Croplife to more than 18,000. Each week Croplife will go to more than 4,500 of these interested readers in one of the four regional crop-areas.

MAKE YOUR PLANS NOW to capitalize on this unique advertising opportunity, exclusively through the pages of Croplife.

WRITE-WIRE-PHONE for the full story of your advertising opportunity in

Croplife

sales
. . . for richer fields

published by **The Miller Publishing Co.**

NEW YORK
114 East 40th Street
MUrray Hill 3-3768

CHICAGO
2272 Board of Trade Bldg.
HArrison 7-6782

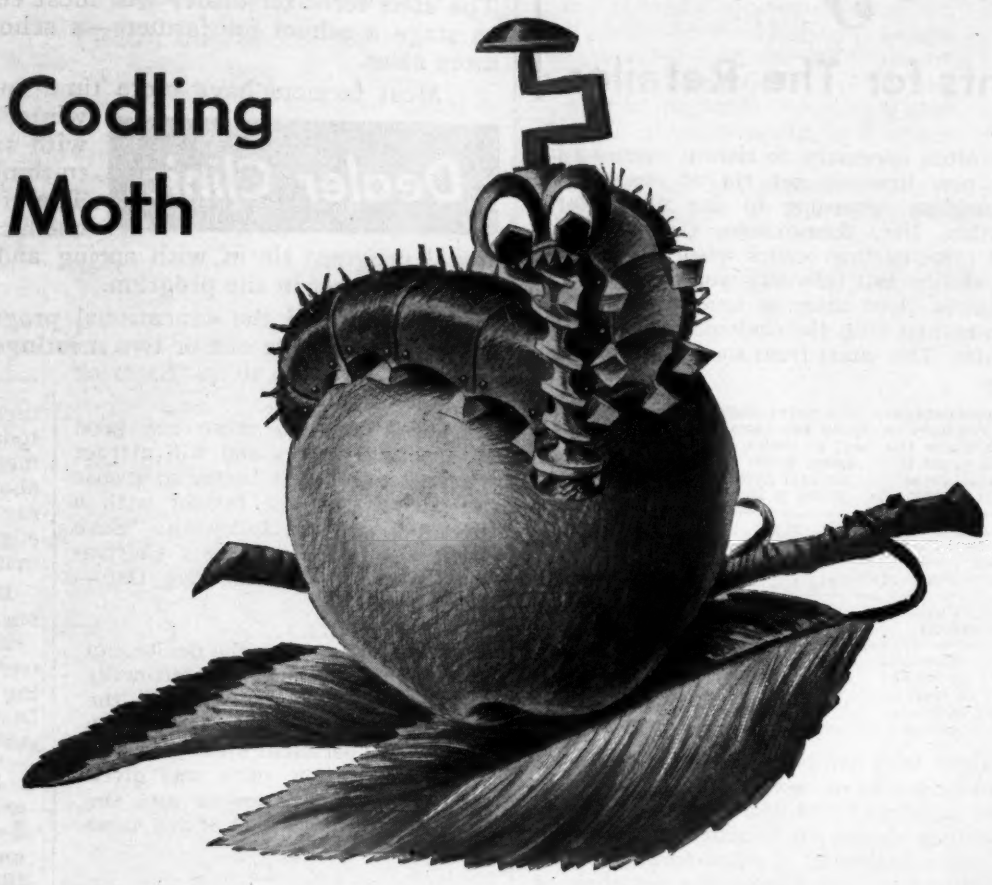
KANSAS CITY
614 Board of Trade Bldg.
Victor 1350

MINNEAPOLIS
2501 Wayzata Blvd.
MAin 0575

BUG OF THE WEEK

Mr. Dealer--Cut out this page for your bulletin board

Codling Moth



How to Identify

The codling moth is a dirty-white or pinkish caterpillar or worm frequently found in apples. Its distribution is all over the United States. In some sections it is called the appleworm.

Life History of Codling Moth

The worms pass the winter in cocoons in crevices under the bark and in other protected places, usually on or beneath the tree. The moths begin to appear about the time apple trees bloom and some moths are present most of the remainder of the growing season. The tiny white eggs are usually laid on leaves near fruit or on the fruit. The first worms normally begin to enter the small apples 3 to 4 weeks after the blossom petals have fallen. The number of generations in a season ranges from one (with a small part of a second) in the northern apple-growing areas, to three nearly complete generations (and a part of a fourth) in the southernmost producing areas.

Damage Done by Codling Moth

Although this pest is usually associated with damage to apples, it also attacks pears, quinces, English walnuts and occasionally other fruits. In apples, it causes the familiar worm holes on the sides and blossom ends of the fruit. The tunnels go completely to the core. These holes are often filled with dark-colored masses, coarse brown or black pellets which sometimes project out of the hole. Such apples are, of course, of small value and the value of fruit thus damaged runs into hundreds of thousands of dollars each year.

Control of Codling Moth

Since this insect burrows inside the fruit, proper timing of application of insecticides is of utmost importance. The first application should be made just after the blossom petals have fallen, according to USDA information. Recommendations for subsequent cover sprays vary from 5-7 days after the first spray, to three weeks; and the second cover spray from 10 days to five weeks. With the pest being active in all parts of the country, recommendations are not the same everywhere. However, most schedules call for use of 50% DDT wettable powder, at the rate of 2 lb. per 100 gal. water; lead arsenate, 3 lb. per 100 gal. water, plus an equal amount of hydrated lime. DDT and lead arsenate may be used in combination with other insecticides and fungicides needed to control other insects and diseases of apples. It is advisable to consult with state experiment stations or county agents for accurate local information.

Drawing of codling moth furnished Croplife through courtesy of E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

Previous "Bug of the Week" features are being reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.

RINGING THE cash register

Merchandising Hints for The Retailer

Price Cutting

Cutting prices is often necessary to reduce overload inventory, pioneer new lines or get rid of obsolete or showroom merchandise, according to the Agricultural Aircraft Association, Inc., Sacramento, Calif. On the other hand, most price cutting occurs when the retailer runs out of sales ability. But this only works against the retailer as it requires three times as much work to get prices back up to normal with the customer, the association's bulletin states. This chart from the association explains the theory:

If prices are cut by:	The percentage more you have to sell to make the same profit if normal gross profit is 20%	The percentage more you have to sell to make the same profit if normal gross profit is 25%	The percentage more you have to sell to make the same profit if normal gross profit is 30%
5%	33⅓%	25%	20%
10%	100% (twice as much)	66⅔%	50%
15%	300% (3 times as much)	150% (Ouch)	100% (Brother)
20%	2,000%—This will never be possible; might as well go out of business	400% (Can you do it?)	200% (If you can't you are in the RED)

What to Stock

Farm supply dealers with varied lines of merchandise are asked to consider scores of new products every year and frequently are puzzled at just what they should have in stock and what they should not handle. One merchandising authority told a gathering of store managers that his firm has a method of determining the selection of items to be added to the inventory. Here are some of the yardsticks used to measure the new item: (1) Is the quality good? (2) Does it perform a new service? (3) Will it enlarge the market for the particular item? (4) Is the service worth the price asked? (5) Does the product carry a cooperative advertising allowance? (6) Does the product carry a cash discount? (7) Will the product replace a competitive item—if so, why? (8) Is the product warehoused locally—or if not, how distant? (9) Will the product give a better profit than any similar item? and (10) Will the manufacturer support the product?

Move Surplus

One feed and farm supply store which found itself with $1,500 worth of old model and surplus merchandise set up a surplus removal sale. On the display was hung a sign which read, "This merchandise is dead weight to the store. Can you use any of it?" As a result of the display, the $1,500 worth of merchandise was sold. If you have such a situation in your store it will be to your advantage to set up a similar display. In most cases it will do a good job of selling out your surpluses.

Causes of Failures

It is up to management whether a retail business will fail or succeed, according to a Dun & Bradstreet report. Of all the retail firms that went out of business in 1952, the report states that 89.4% of the failures resulted from some form of incompetence on the part of management. This is in contrast to the 10.6% that failed because of frauds, neglect, disaster or some unknown reason. Where management fell down is in not getting enough sales, according to the report. Here is where management was to blame: Inadequate sales 52.8%; competitive weakness 16.3%; excessive fixed assets 10.7% and inventory difficulties 10.5%. Ranking behind these were poor location, heavy operating expenses and receivables difficulties. Although these exact percentages may not apply to feed stores it cannot be disputed that inadequate sales are the chief hazard to guard against.

Take a Note

Dealers who have accounts which are long overdue and have had no success in making a cash collection should consider taking a note. But don't take a note without security — either a chattel mortgage or a real estate mortgage. Get this security at the time you take the note and have a definite repayment schedule. If the note is good, you may be able to get it discounted at a local bank. If you are granting credit for any period in excess of 30 days, take security at the time the agreement is made. Do it then, ahead of time, rather than later. You are in a much stronger position at the beginning rather than after you have already extended credit.

Dealer School for Farmers in Winter Will Benefit Farmer And Boost Dealer's Profit

By AL. P. NELSON
Croplife Special Writer

For farmers in many sections of the nation, winter time is school time—that is, if there is an opportunity for farmers to go to school. The alert fertilizer dealer will most certainly grasp the opportunity to stage a school for farmers—a school which will also bring him more sales.

Most farmers have more time on their hands in late fall and winter because the soil is covered with snow and ice, but farmers like to think ahead to spring and summer. Therefore, the alert fertilizer and chemicals dealer can make his educational program tie in with spring and summer, and thus get more farmer interest in the program.

Dealer Clinic

How should the educational program be started? Some dealers may like to devote one or two meetings to "Better Use of Fertilizer." Others may want to stress "Spraying for Weeds," etc.

While titles like these are good for meeting notices and will attract some attention, it is better to arouse the curiosity of the farmer with a title such as the following: "Save Farm Costs Through Less Cultivation." Come to the meeting Dec.—and learn HOW."

At such a meeting the dealer can tell about various experiments which have been held during the past year, such as one at the North Carolina experiment station where, in one operation, corn was given a nitrogen side dressing and the weeds and grass killed at the same time.

Some farmers have heard of this experiment; some have not. Few farmers have realized that through this experiment they will not have to cultivate corn so much. This lowers their labor and machinery costs. The fewer times a farmer has to go over his field with machinery, the more time he has for other farm chores, and the less his soil gets packed. Sprays point the way to lower farm costs. Play this up at your farm meeting. It will interest many farmers and help you to sell fertilizer and farm chemicals and sprayers all at the same time.

One Wisconsin farmer who raises a lot of corn, and who sprays for weeds, found that his highest yield field produced corn for 58¢ per bu., while the lowest yielding field cost him about 89¢ per bu. It is easy to see that fertilizer, sprays and lower labor costs vitally affected the market cost of each bushel of corn the farmer produced. If more farmers would analyze their bushel costs in this manner, they would be more open to progressive methods involving use of additional fertilizer and sprays.

In your educational meetings, Mr. Dealer, you can lay stress on these costs. Thus, besides passing on cost-lowering procedures to your customers, you will also be doing a better selling job on fertilizer and chemicals.

It is well for the dealer to realize the difference between what is termed a sales meeting and an educational meeting. The sales meeting is intended primarily to sell merchandise, with much attention being devoted to it. The educational meeting has a program which tries to pass on to the farmer some ideas he can use. The ideas invariably include use of the dealer's products, but once in a while they do not. There are many fertilizer dealers who say that there are so many new products and uses in fertilizer and farm chemicals today that farmers like to attend meetings where they can learn more about such products. These dealers say that by highlighting such knowledge the dealer will eventually sell more merchandise.

Here are some rules laid down by one good merchandiser in the field:

1. Don't stress too many lines at one meeting. Keep the farmer thinking along one main line of interest. Don't confuse him with other suggestions.

2. Remember that pictures and examples help the farmer to learn. Some excellent pictures in color and on slides are available on fertilizers. Use them to illustrate what you are talking about.

3. Don't try to sell just your product as a fertilizer cure-all. Caution the farmer to consider all elements his soil needs and to buy enough of all of them. Remember that some farmers first thought that liquid nitrogen alone was the answer to all fertilization problems. Now they know better. It pays to make sure the farmer sees a balanced picture of what his soil needs.

4. Repeat key points in your talk. You may get irritated with your wife or friend who repeats himself time and again, but in educational work it pays to repeat key statements and facts several times so that farmers remember them. The farmer may not be able to keep up with you mentally—for you already know the facts you are trying to teach to him—and if you repeat key statements you'll keep him listening longer.

5. Encourage farmers to ask questions. Through questions you will soon be able to know how much the farmers have learned from your educational program. You will also find that through participation the farmers will like the program better, feel a part of it and will be more likely to come again.

6. Try to keep each educational meeting to some simple cost-lowering or production feature which the farmer can use on his farm. In this way he will feel amply repaid for his time and be willing and anxious to come to future meetings.

7. Be sure to give those attending the meetings a simple lunch, for it shows hospitality and promotes friendliness.

8. Remember that the use of farm chemicals and the right fertilizers in agriculture is a relatively new field and that there is need for constant education to keep the farmer informed, so that his pocketbook benefits.

FDA TOLERANCE LEVEL

ASHINGTON—The Food & Drug inistration has established a tol- nce level of 0.75 part per million systox, a mixture of thiono and l isomers for residual tolerances n applied on the following raw icultural commodities: Apples, ssel sprouts, cabbage, cauliflower, kmelons, oranges, pears, pota- , strawberries and walnuts. The ective date of the order was . 29.

pencer Chemical les Set Record

ANSAS CITY—Sales of Spencer mical Co. in the fiscal year ended e 30 set a new record but net ome was down somewhat because non-recurring charges incident to start-up of a new polyethylene ration, Kenneth A. Spencer, presi- t, told stockholders in the annual ort.

Net sales for the fiscal year were ,154,921, compared with $34,104,- a year earlier and the gain was ounted for by the larger volume products sold, primarily from the ksburg (Miss.) Works.

Net income for the fiscal year mounted to $5,118,454, equal to .04 a share on the 1,124,855 aver- e number of common shares out- anding, as compared with $5,287,- 4, or $4.53 on the 1,043,595 aver- e number of common shares out- anding a year earlier.

The non-recurring start-up ex- nses of the Orange, Texas, poly- ylene plant together with costs ident to the training and staffing additional sales and technical per- nnel amounted to about $1,400,000. e increase in gross sales and in- me from Spencer's other products s significant and income taxes were newhat less than in the previous r, Mr. Spencer said.

The company spent more than ½ million on new plant and equip- nt, the principal outlay being for polyethylene plant. The com- y's major construction program tually is completed and the large recurring charges are out of the y, Mr. Spencer stated.

Commenting on various product es, Mr. Spencer said that the pro- ction and sales experience with yethylene indicate the product l be "profitable and should make atisfactory contribution to earn- s."

"Although the market for nitro- n products has become more mpetitive and more seasonal as e result of the increase in na- onal nitrogen capacity, Spencer, virtue of its favorable plant cations, its production of nitro- n in desirable forms, adequate orage facilities, and its well-estab- hed marketing programs, antici- tes very satisfactory results for ese products in the current fiscal ar."

Spencer spent about $1,100,000 on earch and development and an ad- onal $400,000 on the related pro- ms of agronomy, product improve- nt and market research. The cur- t fiscal year's budget for research $1,300,000 plus $425,000 for these ted programs.

EMULSOL APPOINTMENTS

HICAGO — Solomon Epstein, ex- tive vice president of Emulsol mical Corp., division of Witco mical Co., has been appointed eral manager of the company. Dr. rles Fuchs, formerly chief chemist Emulsol, has been elected vice sident in charge of research and elopment.

Velsicol Announces Change in Name

CHICAGO — A corporate name change to Velsicol Chemical Corp. has been announced by the former Velsicol Corp.

John Kirk, vice president and director of sales of Velsicol, said the change was effective Sept. 1, and was made to more fully describe the company's present activities. The company has its general offices at 330 E. Grand, Chicago 11, its eastern and foreign sales office in New York and its western office in Berkeley, Cal.

Western Texas Cotton Fields Suffer Losses

LAMESA, TEXAS—Cabbage loopers have severely damaged hundreds of west Texas cottonfields. These insects have been present for several years but damage previously was not heavy. This year they built up to large numbers and some fields were damaged before farmers realized the seriousness of the infestation.

Endrin has given good results when used in time. One peculiarity about the long green worm is that the little ones are easy to kill, but grown ones are more difficult to kill.

Two Join Division Of American Potash

LOS ANGELES—American Potash & Chemical Corp. has announced two additions to the engineering department of its Eston Chemicals Division.

Rudy Peterson has joined the company as senior process engineer. Mr. Peterson, who previously was a chemical engineer at General Petroleum's Santa Fe Springs, Cal., plant, is a native of Portland, Ore., and a graduate of the University of Southern California.

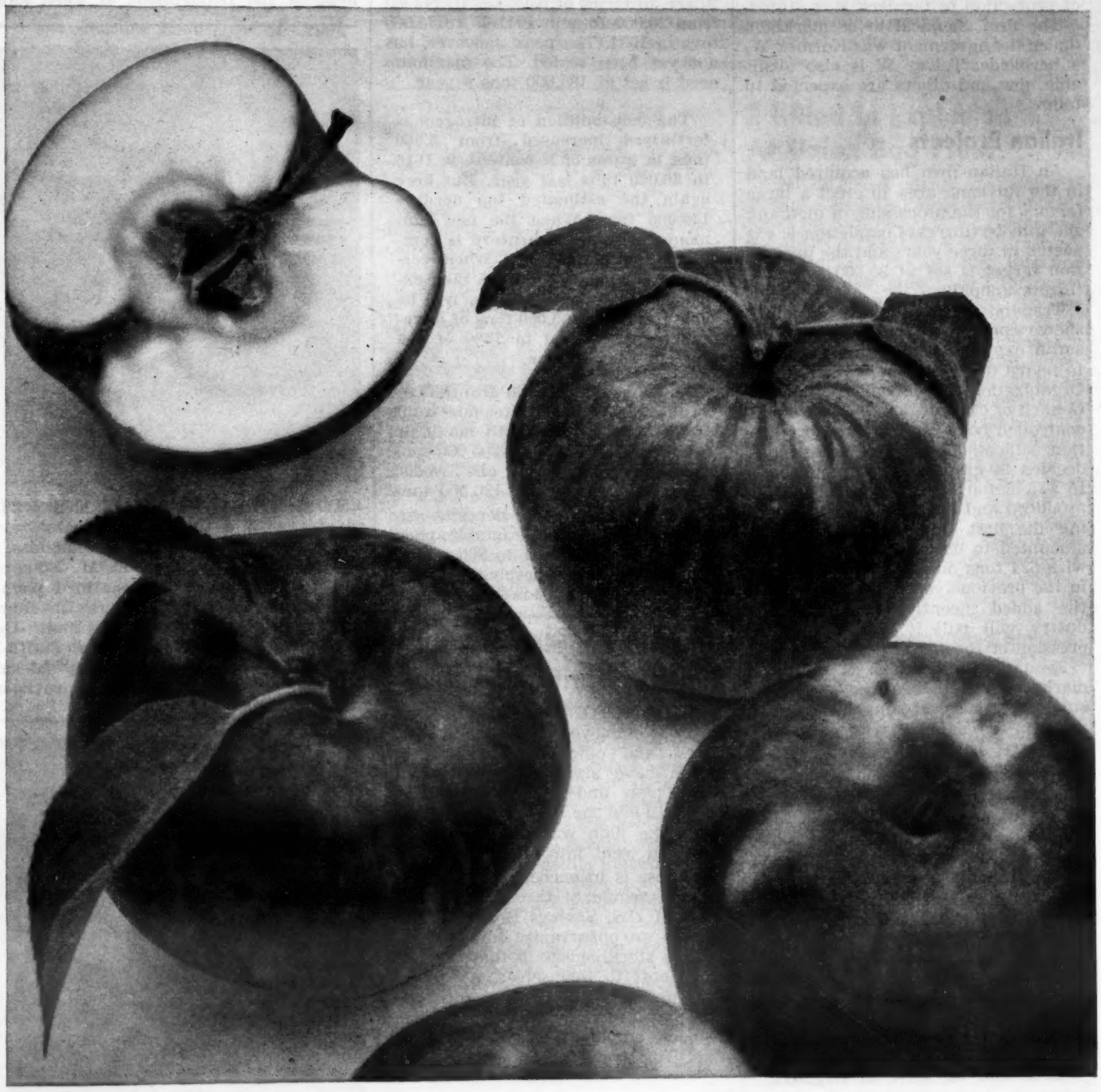
Karl Wahl was named as a technician assistant in the company's engineering department. Mr. Wahl is a student at the University of California at Los Angeles, where he is majoring in chemical engineering.

New Georgia Plant

LAWRENCEVILLE, GA. — Ideal By-Products, a division of Wilson & Toomer Co., Jacksonville, Fla., has opened a fertilizer manufacturing plant here.

DEMONSTRATION PLOTS SET UP

SIDNEY, NEB.—A plan to promote increased and advantageous use of fertilizer in this area has been launched here by the Farmers Union Cooperative Gas & Oil Co. The co-op this year set up seven demonstration plots on farms up and down the Lodgepole Valley near here. Each plot is treated with a mixture of dry fertilizer for which soil analysis has indicated the need, and farmers can observe the results throughout the season.



SWEET PROFIT-MAKERS

Big, red, juicy apples are not grown by accident. The use of modern commercial fertilizers is a calculated investment to bring in a better crop—and a better income for the grower.

Potash, a major component of modern commercial fertilizers, improves crop quality as well as enriching the soil, building crop resistance to disease and increasing total product yield. USP's high-grade muriate of potash is free-flowing and non-caking—important advantages in the production of fertilizers that help make the sweet-tasting apple make sweet profits for the grower.

SUNSHINE STATE POTASH A PRODUCT OF NEW MEXICO U.S.A.

REG. U. S. PAT. OFF

HIGRADE MURIATE OF POTASH 62/63% K_2O
GRANULAR MURIATE OF POTASH 60% K_2O MIN.

UNITED STATES POTASH COMPANY
INCORPORATED
30 Rockefeller Plaza, New York 20, N. Y.
Southern Sales Office
Rhodes-Haverty Building, Atlanta, Georgia

WORLD REPORT

By GEORGE E. SWARBRECK
Croplife Canadian and Overseas Editor

U.K. Distributor

Fisons Pest Control, Ltd., one of the Fison group of companies specializing in fertilizers and pesticides, states that it has been appointed sole distributor for the du Pont range of agricultural chemicals in the U.K., Eire, and British possessions in Africa.

The chemicals are being offered through the usual trade channels under du Pont trade names and British patents. The introduction of the du Pont brands alongside Fison's own products enables the British company to offer a complete range of protection to farmers, it is stated.

The first chemical to be marketed under the agreement was Karmex W, a herbicide. Telvar W is also available now and others are expected to follow.

Italian Projects

An Italian firm has acquired land in the Ravenna area to erect a large factory for the processing of methane gas into fertilizers. Completion is expected in three years and the production target is set at 35,000 tons fertilizers annually.

Traders in Italy have recently shown concern at the decline of the sulfur export industry. In an attempt to revive the trade, the Italian Sulfur Organization has announced that the Council of Cooperation, a government controlled body directing the production, sale and export of sulfur, has decided to grant a rebate equivalent to $17.46 ton on every ton of sulfur produced and exported. Exports during the first three months of 1955 amounted to only 50 tons, compared with 624 tons during a similar period in the previous year. It is hoped that the added incentive given the industry will pull it out of the depression of recent years.

Eyed by the Italians is the U.S. market and officials have already started up a sales campaign.

Diseases in Iraq

"With agricultural diseases running virtually uncontrolled in Iraq since Biblical days, we have a big job to do here. Wheat rust this year wiped out 50 to 60% of the crop in some sections, with the average loss for the nation from rust about 20%. The spores color the soil red, and some fields look almost as red as American barns, as far as you can see." This was the report received by Dr. D. R. Theophilus, president of the University of Idaho, from Prof. Roscoe D. Watson, university pathologist, who is now on leave in Baghdad, where he is serving with the U.S. agricultural aid unit.

Nitrate Need

Egypt is negotiating the purchase of 100,000 tons Chilean nitrate of soda, according to a trade report from Cairo. At one time the Egyptian need was 600,000 tons a year but the demand has fallen since the recent inauguration of a synthetic fertilizer plant. The total requirement this year will be little more than 300,000 tons, the report adds.

The Chilean trade has suffered from the growth of the synthetic fertilizer industry but a new plan is expected to aid the producers in meeting the competition.

The Egyptians are making determined efforts to increase the phosphate output. Production in 1954 has been estimated at 534,691 tons, compared with 443,287 tons in 1953. Exports, however, declined to around 400,000 tons compared with 432,900 tons shipped in 1953.

Swedish Progress

The increase in the use of fertilizers in most countries of the world, or at least in those countries which have taken advantage of scientific progress, during the past 45 years is remarkable.

Sweden can be exampled in this connection. According to a report presented recently to the Swedish Agricultural Academy in Stockholm, the consumption of potassium fertilizer, in terms of K_2O, has increased from 20,000 tons in 1911-15 to 74,000 tons in 1954. The peak, however, has not yet been scaled. The maximum need is set at 185,000 tons a year.

The consumption of nitrogenous fertilizers increased from 5,000 tons, in terms of N content, in 1915 to 80,000 tons last year. But here again the estimated top need is 150,000 tons. When the new ammonia plant at Kvarntorp is completed next year, and when certain other plants complete their expansion programs, Sweden will be able to produce 55,000 tons of nitrogen a year, equal to 70% of the current consumption.

The academy was told also that the consumption of phosphates now totals 110,000 tons a year, with maximum requirement assessed at 205,000 tons. The total capacity of all Swedish plants now amounts to 130,000 tons.

Sweden's iron ore deposits are stated to contain extractable phosphate rock, equivalent to 200 million tons of 20% superphosphate, enough to cover domestic needs for 400 years.

Du Pont Employees Sign for Thrift Plan

WILMINGTON—More than 64,000 Du Pont employees in plants, laboratories, and offices throughout the nation have signed up for a new thrift plan under which the company will add 25¢ to every dollar they save. The plan was announced last May and went into effect Sept. 1.

Purpose is to encourage employees to save regularly through the purchase of U.S. Savings Bonds, and to provide an opportunity for them to become stockholders in the company at no cost to themselves. As an incentive, the company will contribute to a trust fund one-fourth as much as each employee saves under the plan. This contribution will be used to buy Du Pont common stock for him.

Grants Made for Work On Sugar in Pesticides

NEW YORK—Research grants for work involving the use of sugar in pesticides and plant feeding were recently announced by Henry B. Haas, president of the Sugar Research Foundation, Inc. The grants were part of a total of $128,900 for the fiscal year 1955-56 appropriated for 17 scientific investigations of sugar's roles in health, agriculture and industry.

The grant for work on pesticides was to Battelle Memorial Institute, Columbus, Ohio, where the work will be headed by Dr. Jack Kahler. The work on sugar sprays in plant feeding will be conducted at California Institute of Technology, Pasadena, under Prof. F. W. Went.

AT KENTUCKY CONFERENCE—Shown above is a group in a huddle at the annual Kentucky fertilizer conference, held last month at the University of Kentucky. From left to right are Prof. P. E. Karraker, University of Kentucky; Dr. J. H. Lilly, Iowa State College, Ames, Iowa; Dr. Russell Coleman, National Plant Food Institute, Washington, D.C.; Dr. G. T. Webster, head of the Agronomy Department, University of Kentucky, and Bruce Poundstone, head of the Department of Feed and Fertilizer, University of Kentucky.

SMITH-DOUGLASS VETERANS RETIRE—Two Smith-Douglass Co. employees with a total of 51 years' service have retired at the company's Norfolk, Va., plant. Ralph B. Douglass, president, left above, was on hand to congratulate and thank F. M. Edwards, 18 years, second from left, and George T. Wood, 33 years, third from left, with Robert B. Rowland. Mr. Rowland, who with Oscar Smith founded the Smith-Rowland Co., which ultimately grew to become the Smith-Douglass Co., hired both Mr. Wood and Mr. Edwards. Mr. Wood, one of Smith-Douglass' oldest employees in length of service, was a Norfolk factory salesman, and Mr. Edwards a maintenance foreman. Both retired under provisions of the company's pension plan.

AGRONOMY AWARD WINNER—The student agronomy club at the University of Illinois recently was named winner of the National Agronomy Achievement Award for 1955, and received a silver trophy, emblematic of the award, and a check for $100 from the National Plant Food Institute. Accepting the award, center above, is Duane Swarts, Illinois senior from Dixon, who is president of the club, while Dr. M. B. Russell, left, club advisor and head of the agronomy department at Illinois looks on. Dr. Willard H. Garman, right, chief of agronomic relations of the National Plant Food Institute, made the presentation during the annual meeting of the American Society of Agronomy in Davis, Calif. The Illinois group, which has 75 active members, is one of 39 such student organizations at leading agricultural colleges of the U.S. All are members of the Student Section of the American Society of Agronomy. Dr. Richard M. Swenson, Michigan State University, chairman this year of the ASA Student Section, supervised the contest.

RAINED CREW DESIRABLE

Entering and Working in Chemical Storage Tanks A Real Safety Challenge

EDITOR'S NOTE

This article, by Joseph Guelich, afety manager of the General Chem- al Division of Allied Chemical & ye Corp., New York, is adapted rom a talk he made recently before he Maryland Governor's Safety- ealth Conference at Baltimore. ince the points made by the author re so applicable to many conditions onfronted by the agricultural chem- al industry, Croplife presents it here s a safety guide.

The inside of a tank comprises a ttle world of its own. Once within s confines, a workman is confronted ith conditions very different than hose that obtain in open air.

Like a beetle in a milk bottle, the an in a tank faces many hazards. ven children know that to drop a urning match in the milk bottle here the beetle is crawling, will uffocate the insect with CO_2. A ouple of drops of chloroform in the ottle will kill the beetle when he nhales the poisonous gas.

In other words, happenings that would be perfectly harmless in the open air, can expose a man seriously or even fatally in the confines of a tank. That is why it is so extremely important to prepare a tank for safe entering before anyone is allowed to go inside.

In the first place, the atmosphere nside must be made safe to breathe. or example, a gasoline tank that as been drained but not thoroughly lushed out, can suffocate a man who nters it. Also, the least spark, such s the type caused from a shoe nail triking against the metal floor of the ank, could cause an explosion that would blow up the tank.

Again, the atmosphere in the tank nay change. For example, if the man n the tank is applying a rubber ining, the solvent and adhesive he ses may evaporate and produce a azardous atmosphere. Or, if he rings an oxyacetylene rig into the ank and the oxygen cylinder is leak- ng, oxygen may accumulate to a oint that when he strikes a spark is clothing will be caught on fire. ven tank cleaning operations can ause hazardous atmospheres by stir- ing up pockets of hazardous ma- erials.

In unprepared tanks, hazards to the man inside the tank may come from outside sources as well. If there is an impeller in the tank, the motor which drives this impeller may be inadvertently started. If the tank is connected to the sewer, the sewer gas may back up. Pipes connected to the tank may leak and produce hazardous atmospheres, either by the nature of the leak or by reaction between the leak and something in the tank.

Tank safety is a complex study, nd I think we might break it down nto divisions, something like this:

1. You should control **who goes into** tank. The most convenient control s the "tank entering permit."
2. You should make the tank safe o enter.
3. You should insure that the men, nce they have entered the tank, will ontinue to have a safe work place uring the entire job.
4. You should have an emergency lan, in case anything unforeseen oes wrong in the tank.

Let's take these precautions up point by point.

First, you should print up a stock of tank-entering permits, and then establish an iron-clad rule that nobody goes into a tank without a permit being issued. This should stop your supervisors from deciding, on the spur of the moment, to do a quick tank job.

The persons signing the permit should be individuals such as the superintendent, the chief chemist and the master mechanic. In signing, they should certify that, to the best of their knowledge, the tank has been satisfactorily prepared; that the atmosphere is safe; and that proper safeguards such as forced ventilation and rescue gear will be provided.

After the permit system is in operation, the second step is to develop plans to prepare the tank for entering. Your object is to duplicate as nearly as possible, the situation of the tank on the day it was first delivered to you—without any lines or services hooked up.

First, of course, you're going to drain the tank, fill it with water and drain it again. When you think the tank is safe, you're ready to disconnect the lines. Note that they must be "disconnected," not just "shut off" from the lines. Liquid or gas can leak through a closed valve; or the valve can be accidentally opened. The lines need to be disconnected, and their ends capped off, as near to the tank as possible.

If you have mechanical devices such as impellers in your tanks, the wires to the motor terminals should be disconnected and the switches locked open.

After the tank is drained, washed and isolated, we come to the third step—entering it. Here, again, there are some preliminary precautions.

First the top and side manhole covers are removed and tests for gas made from outside the tank, of course. Depending on the gas you think might be present, you would use an H_2S meter, a CO meter, an explosimeter, or an oxygen-deficiency indicator. Some men advocate following this by throwing a handful of burning waste into the tank. If it goes out, or if it flares up, the tank needs more purging. This is also an additional check on your instruments.

Next, you need to supply a forced draft in the tank. You should try to change the tank atmosphere once every five minutes. You should usually do this with a blower. If you have only one manhole, you're better off pulling the air out of the tank, using a long, non-collapsible hose leading from the suction side of the blower to the bottom of the tank.

In any tank entering job, there's an important member of the crew who never enters the tank. This is the observer. It's his job to watch the entire job and to institite emergency proceedings if anything goes wrong.

There are some decisions that will be governed by your special problems. These are whether to use low-voltage or explosion-proof lighting; whether you need lift lines; and whether you are going to supply air to masks worn by the men. You'll find that these subjects produce a lot of opinions, pro and con, but you'll probably reach healthy conclusions.

So far, we've not entered the tank. Before doing that, it is appropriate to put on safety harnesses. Just imagine now that you're standing on the bottom of the tank with me. Our preparation has taken us several hours, but we feel pretty safe now. Nothing's going to pour in on us. If we get in trouble, the observer is going to get help and get us out.

This brings us to our fourth step: the emergency plan. The observer has his own harness and extra life lines, and he has gas masks or air-fed masks. If he sees trouble, he yells for help! Then, the rescue crew goes into action.

Tank mishaps are often multiple accidents. One reason for this is that when you see a man collapsed on the bottom of a tank, your first impulse is to rush in and save him. Unless you're thoroughly trained, you don't stop to think that whatever got him might get you too!

This makes a strong case for use of a **trained** rescue crew. This crew should have full-scale drills, to learn the intricacies of tank rescue. For example, can one man lift another man on the end of a rope? Can you get an unconscious man through a 16 in. manhole? Can the observer be heard when he yells for help? These are points that will develop when you start your drill—points that may suggest tightening up your procedures, even changing your engineering specifications.

A man in a tank is in about the same condition as a man under water. He has to have supplied air. Everything he is to do must be planned in advance. He must be rescued, if necessary.

SAFETY AWARDS—At a family safety ceremony, Michigan Chemical Corp. of Saint Louis, Mich., received the National Safety Council Award of Merit, the Outstanding Achievement Award of the Michigan Mutual Liability Co., and the Joseph A. Holmes Certificate of Honor. Left to right are Theodore Marvin, president of Michigan Chemical; R. O. Pynnonen, U.S. Bureau of Mines; John Wallace, National Safety Council; Victor Troyer, Michigan Mutual Liability Co., and Fred A. DeMaestri, vice president, Michigan Chemical. The awards were presented for achieving a record of 1,000,000 man-hours without a lost time accident in the company's chemical plants at Saint Louis and Manistee. Frank A. Curtiss, personnel and safety director, Mr. DeMaestri, and Mr. Marvin participated in the ceremonies.

2 Killed in Explosion At Union Bag Plant

CHICAGO—A steam cylinder explosion killed two employees and injured seven others at the Union Bag & Paper Co. plant at 4545 Palmer St. here Aug. 18. The cylinder was one which supplied steam used for heating and moistening paper for the corrugating process.

According to company officials, the blast, the cause of which still is unknown, hurled the cylinder, 3 ft. in diameter and 6½ ft. long, about 100 ft., mowing down employees before coming to rest in an opening in a wall through which freight cars are loaded. The force of the explosion also blew out a 50-ft. section of the north wall.

Elmer C. St. John, the firm's industrial relations supervisor, said he was sitting in the office when the explosion occurred. He ran outside and began aiding the injured, with the help of other employees.

A fire marshal estimated the damage at $10,000.

PH.D. CONFERRED

COLLEGE STATION, TEXAS — J. V. Enzie, professor and head of the Horticulture Department, New Mexico A&M College, has completed all requirements for his Ph. D. degree in horticulture at Texas A&M College. The degree was recently conferred in absentia.

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NAC SPEAKERS VOICE

(Continued from page 1)

chandising and said that with sound public education the use of agricultural chemicals should follow within reason the growth of population and consumer demand in the food field and other lines.

"This is the only country in the history of civilization where most people have had enough to eat most of the time," he said. "Agricultural chemicals have made some contribution to this picture and can make a major contribution in the future. Every $1 spent for agricultural chemicals will return from $2 on up to the farmer.

"If you will look around the world, you can find a relationship between the quality and quantity of food produced and the national health. Show me a nation where agricultural chemicals have but little use and you will have found a nation whose diet, for the good of its people, should be improved."

Mr. Allen said that, with the growth of the industry, the NAC is going to need more money and more help. An insecticide and a fungicide specialist will be needed soon, he said.

He commended Mr. Hitchner and members of his staff along with committee members for their work during the year.

In a talk on "The Major Trends in the Pesticide Industry—Its Problems, Its Needs and Its Future Growth and Development," Mr. Moyer said: "We have suffered and I believe we still do suffer from rapid growth of this industry in many respects, but we are growing up.

"It certainly is clear that this industry has a basic and vital job to do, and each segment of it must stand or fall on the efficiency with which it does that job.

"There is room for big companies and small ones, national companies and local ones, if they will wisely fit themselves into the picture and perform their functions efficiently without attempting to overreach and infringe upon activities they are not suited to perform."

Two Developments

One of the most important developments in the industry, Mr. Moyer said, is the stimulus given to research and related technical services.

Two other factors, which have affected the industry are (1) The introduction of a great many new companies into the business, particularly some very large chemical manufacturers, and (2) The development of a great many small companies, mixing and formulating basic chemicals produced by others.

"Certainly no one can deny the essentiality of the large chemical manufacturer with basic chemical production facilities and a large technical staff," Mr. Moyer said. "At the same time I don't believe anyone can properly deny the place of the small mixer and formulator who serves at a local level.

"It is inevitable that with so many new factors involved, time is required for the proper integration of the various activities to their most efficient functions and relationships."

Mr. Moyer said that it was one of the industry's important responsibilities to maintain adequate production facilities and inventories of materials to insure that the farmers will never be caught short of needed pest control chemicals.

Pesticides comprise a small but highly specialized segment of the chemical industry and actually a small segment of the agricultural chemical industry, Mr. Moyer said.

"However, we are unique in our need for intelligent and capable personnel in the field, both of a technical and commercial nature," he said.

"We are also in some ways unique in the way we have not only lived with but also have helped to formulate many facts of supervision and control by the government for the protection of the farmer."

A firm may be only cutting its own throat by desperately trying to steal a competitor's established business, Mr. Moyer said.

"If we keep our eye in the direction of the development of business, based on service and efficiency, we will not have to seek the channel of endeavor which consists of simply trying to steal business which has been developed by others," he said.

"If I were to make one single plea to this industry in the interest of its future healthy growth and development, it would be to concern ourselves most seriously with the management function, whether departmental or company-unit.

"I believe this is the segment where sound thinking, constructive policies and good, patient business judgment must be further developed to lead us to a higher plane and to the greatest individual and collective satisfaction of accomplishment."

Note on Economy

Mr. Luedicke said that there are two major vulnerabilities involved in the current economic boom. These are (1) The rapid rise in private indebtedness and (2) The progressive cost squeeze against smaller business enterprises.

"One of the main features of the current boom is the fact that while most large corporations are showing record profits, smaller businesses are being progressively squeezed between rising costs and increased competition," he said. This factor, in the end, may seal the doom of the greatest boom in our economic history, he said.

There are only two solutions to this problem for smaller businesses, Mr. Luedicke said. One is to raise prices and the other is a slowdown in wages.

However, raising prices is not a very practical answer because of resulting consumer resistance. And, the whole question of wage policy is "tied to the so-called purchasing power theory as championed by labor unions," he said.

"Their strategy is based on the unspoken theory that uninterrupted increases in consumer purchasing power are the best and only way to keep a boom rolling."

Mr. Luedicke said that when the federal government in 1954 returned to a policy of credit ease it was designed to give the economy a gentle nudge, but that the step soon took on the proportion of a shove.

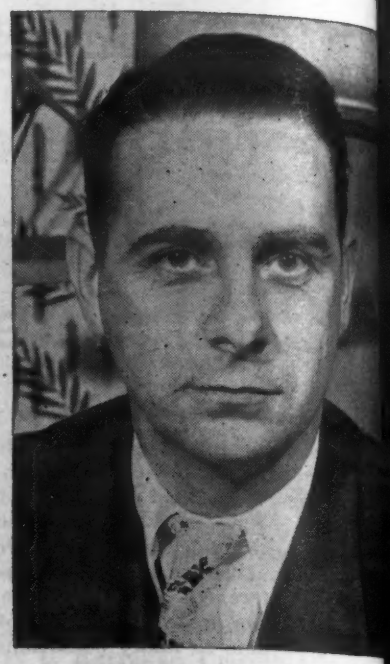
Should the economy be sluggish in the fourth quarter of 1955 and early 1956, it can be expected that the credit restraints will be turned off once again to keep a warm prosperity glow in the election year, he said.

M. R. Budd, Hercules Powder Co., Wilmington, Del., program committee chairman opened the Sept. 7 session, and Mr. Allen presided.

REPORTS ON NAC SESSIONS

SPRING LAKE, N.J.—Coverage of the National Agricultural Chemicals Association's annual meeting in this issue includes all of the Sept. 7 and 8 sessions with the exception of a Sept. 8 talk by G. E. Lehker, Purdue University. That talk, along with a talk by James D. Hopkins, Hopkins Agricultural Chemical Co., Madison, Wis., and a panel discussion on the Miller amendment on Sept. 9, will appear in next week's issue of Croplife.

Duncan MacDonald



Dr. Charles W. Nelson

SAFETY SPEAKERS—Shown above are two speakers scheduled for talks at the annual meeting of the Fertilizer Section, National Safety Congress, which will be held at the LaSalle Hotel, Chicago, Oct. 17-18. Duncan MacDonald, safety engineer, Anaconda (Mont.) Copper Mining Co., will discuss mechanical guards for the fertilizer industry on the Oct. 18 program. There also will be a display of guards. Mr. MacDonald, who is a member of the Public Relations Committee of the Fertilizer Safety Section, has been in the safety engineering field for 17 years. At the Oct. 17 session Dr. Charles W. Nelson, University of Chicago, will report on the employee motivation study which has been undertaken by the section. Dr. Nelson has been in charge of the study.

USDA SCIENTISTS STUDY

(Continued from page 1)

or stems is absorbed and translocated both upward and downward inside the plant. With the help of soil moisture, this chemical can even move from the roots of a treated plant into those of an adjacent untreated plant in the soil. MOPA is a growth-regulating chemical, first compounded by Dr. Wilkins Reeve of the University of Maryland.

Dr. Mitchell and his associates at the U.S. Plant Industry Station, Beltsville, Md., believe that the great mobility of MOPA within plants is probably due to the chemical's basic physical makeup, or molecular structure. They have found another substance, chemically related to MOPA, which also moves readily through plants, though not from the roots of one plant to another. This second chemical is mandelic acid. Unlike MOPA, mandelic acid has no visible growth-modifying effect.

The results obtained with mandelic acid seem to indicate that the ability of a chemical to move inside plants can be independent of any ability the compound may have to affect plant growth. Thus, it may be possible to develop systemic chemicals of many different kinds, depending on the purposes they are to serve.

Another new approach to the problem of developing superior chemicals for plant-pest control is being tried by the Beltsville scientists. It involves adding certain substances to recognized plant-growth modifiers to increase their systemic action. Like the work with MOPA and mandelic acid, these studies also have been greatly aided by use of radioactive materials.

For example, the researchers have employed radioactive 2,4-D to trace the movement of this well-known weed killer through a plant. They discovered that certain chemical additives—called "cosolvents"—boost the amount and rate of absorption and translocation of 2,4-D in the plant.

The most effective cosolvent of several materials tested so far was an industrial detergent, Tween-20. It increased the systemic action of 2,4-D in bean leaves about 800% within 72 hours after the plants were treated. This research indicates that such additives used with a herbicide can be a very important part of the total formulation.

Use of radioactive 2,4-D has revealed also that plant leaves take up the largest amounts of the chemical when they are growing most vigorously. Furthermore, 2,4-D is most effectively translocated from the leaves to other plant parts when the leaves are in the intermediate stage of development, or most vigorous stage of growth.

Small, young leaves are gathering nutrients for their own development, but do not pass much along to other plant parts. Mature leaves have slowed down their life processes, and thus they aren't moving much nutrient material along either. Leaves in an intermediate stage of development are most actively receiving and sending plant nutrients. Herbicides applied to such leaves are readily absorbed and translocated to other parts of the plant.

With radioactive growth-regulating chemicals—plus the analytical technique known as chromatography—the scientists are finding the identity of these chemicals following their absorption and movement through plants.

Radioactive tracers mark the movement of the material through plants and chromatographic methods (by which chemical compounds are separated into different, identifiable layers) make it possible to identify the form or the presence of the chemical at particular locations in the plant.

This research has shown, for example, that very little 2,4-D is actually taken into a plant, and that some of the growth-stimulating substance absorbed does not remain as 2,4-D but probably is changed to other chemicals through action of plant enzymes.

Firm Registers for Business in Wisconsin

MADISON, WIS. — Fertilizer Construction Co., Inc., a Delaware corporation, has registered with the Wisconsin secretary of state at Madison to do business in Wisconsin, in the general construction and building line. The application shows a capital stock of 1,000 shares of common par value of $100 per share, not paid in up to time of application.

The registered agent for Wisconsin is James E. Madigan, Memorial Drive, Green Bay, Wis. The principal office of the corporation is located at 100 W. 10th St., Wilmington, Del.

COOPERATION OF RESEARCHERS

(Continued from page 1)

ol of pests, government scientists re constantly finding new uses for isting commercial pesticides," he id.

Few pesticides are not tested by government against all of the portant public health and agricul- al pests," Dr. Simmons reported, l added that "when a material is ved effective, the demand and the ount of material are increased." e fact that "each year, many tons both new materials and new form- tions are manufactured as a di- ct consequence of government re- rch," was pointed out by the gov- nment scientist. "We in govern- ent are gratified to see such direct, actical results of our efforts," he id.

Dr. Simmons declared that the gov- nment protects the insecticide in- stry through research to establish iteria for safe use of pesticides . . . the absence of government stand- ds, the manufacturers would have do much more research and ex- nsive policing of products, he said. Uniform standards of safety would difficult or impossible to establish d probably neither the public nor e industry would have the protec- on now afforded."

Speaking on legislation covering gricultural chemicals, Dr. Sim- mons indicated that "While re- search results in regulation, it also prevents unnecessary restrictions . . the government has an obliga- tion in both public health and agri- culture to recommend the most ef- fective pesticides available that can be used with reasonable safety.

"If we are unreasonably cautious, e deprive the public of the benefits technological advancements; if we re not cautious enough, we may oster a toxicological hazard."

Dr. Simmons observed that "Some eople believe that the use of any hemicals on our food, our animals, r ourselves is detrimental to health nd that use of all chemicals for hese purposes should be banned by overnment regulations. Others pro- ose that we should rely upon and se only those older pesticides which ave a long safety record.

"The latter group ignores the fact hat safety records of the older ma- erials were established by usage, ust as subsequent experience will ttest the safety of many new com- ounds.

Opposite Position

"Advocates of the opposite position mplore that the American industry e allowed to manufacture and sell ffective pesticides with little govern- ent regulation and that such evalu- tion as the government may make, e chiefly confined to tests of com- ounds for their effectiveness . . . ithout too much regard for hazard o human health."

The fact that many consumer pub- ications have given the public the dea that pesticides result in a va- iety of "cardiovascular diseases"— nemia, insanity, poliomyelitis, cancer, inusitis, gastrointestinal malfunction, neumonitis, alkalosis and a host of ther diseases . . . that have existed or centuries," was ridiculed by Dr. immons.

"We made an epidemiological study f 83 farm laborers and a survey of 39 unselected persons on a large Mississippi plantation where insecti- ides were used in large quantities ersistently, and in some instances, romiscuously, for the control of cot- on insects. Except for cases of pois- ning due to over carelessness, no ffect of the chemicals on the sub- ects studied was noted," he reported.

No evidence was found that pes- ticides were the cause of any chronic disease or a contributing factor to diseases of any etiology.

Dr. Simmons emphasized, however, that the fact that safe levels of exposure can be established, does not indicate that modern pesticides are harmless. "Proper precautions must be exercised in using the potent materials available," he said, and added that the present record of poisoning and death from the use of pesticides would be much greater if the industry and government were not constantly alert to the hazard.

"We see no cause for alarm in the use of the new materials as long as government and industry continue research to give adequate information on the characteristics of these compounds before they are released for sale."

The address concluded with the hope being expressed that industry and government continue to work together toward the same ends. "Governmental and industrial research in the field of pesticides is completely complementary," he said.

Fruits of Research

Dr. Thurston's address pointed out that farm efficiency is greatly aided by research in the agricultural chemicals. With a rising national population in the face of decreasing farm workers, it is obvious that greater production of agricultural products must be attained, he declared.

The American Cyanamid Co. scientist named four areas in which research may be most fruitful. These included the development of more effective chemicals to protect food from spoilage after harvest; reduction of meat losses through better control of parasites and other pests which attack meat animals; better control of pests causing extensive losses of standing timber in forests and development of systemic pesticidal chemicals.

Dr. Thurston reminded that farmers spend over $250 million annually for pesticides alone, thus saving themselves from losses estimated at around a billion dollars. "Without the chemicals for plant and animal nutrition, for growth regulants or for food preservatives now being used, the losses in farm income and the decrease in available food products, can only be imagined," he went on.

Developments of new chemical products for control of various agricultural pests have been numerous, he reminded. The herbicides with selective properties were pointed out as being a tremendous boon to agriculture; pesticides are protecting almost every product of agriculture, he said, and the use of insecticides is economically rewarding both to the farmer and to industry. "Further research should certainly increase these rewards," he observed.

Fungicides comprise another valuable group, with both organic and inorganic compounds being used to lessen and to control fungi and other organisms in crops and animals. Disease losses in field crops cost the farmer more than $1½ billion a year, he said, and with the large number of unsolved problems in this connection, "There can be no doubt as to the need for continuing research in this area."

Objectives sought in agricultural chemical research include the discovery of new compounds, development of new or improved production methods for compounds of known use and development of new or known compounds of agricultural usage, he said. "The search for new compounds for use in agriculture is an extremely varied and complex project and there are many objectives," he said.

Looking ahead in the pesticide field, Dr. Thurston declared that it is reasonable to suggest that systemics will be particularly important in the pesticides of tomorrow. "If one wishes to let his imagination wander, the farm practice of the future could conceivably develop to the point where planting and application of all necessary chemicals to provide nutrients and protection from pests for the entire season could be carried out in one operation," he concluded.

In his report to the association, Lea S. Hitchner told the group that the agricultural chemical industry faces a period of expanding markets. Many farmers already know the economic value of pesticides, he said, but now a number of new fields are beginning to develop where pesticidal chemicals can be of great importance in saving billions of dollars and in improving sanitation conditions.

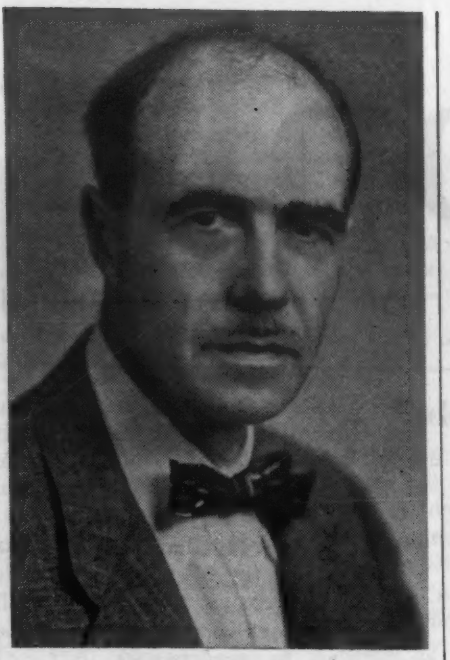
Included in this category is the current government campaign for clean grain, attainable only through the use of chemicals, he said. The further use of fungicides to control plant diseases should be promoted by the industry and the current road-building program offers a broad potential for the application of herbicides for economical control of weeds.

"Other areas which offer expanding markets for pesticide chemicals include the control of insects and diseases which are causing great losses to standing timber in our forests, and control of soil insects and other soil-infesting pests which attack plant roots," the NAC secretary declared.

All together these pests are causing losses to agriculture estimated at nearly $9 billion a year, Mr. Hitchner said. These losses can be substantially reduced by the use of pesticides.

Pointing out that new markets will not develop entirely by themselves, Mr. Hitchner urged an education program to acquaint the public and potential users with the benefits to be gained from the use of chemicals in these new and expanding fields. He also suggested more research by industry and government to aid in the program to further reduce losses to the economy caused by insects, plant diseases, weeds and other pests.

F. W. Hatch, Shell Chemical Corp., New York, NAC vice president, presided at the Sept. 8 session.



Dr. Thaddeus Parr

APPOINTED — Pittsburgh Coke & Chemical Company's research and development department has announced the appointment of Thaddeus Parr to its staff. Dr. Parr, an entomologist, will serve as advisor to the company's Agricultural Chemicals Research group and will assist the agricultural chemicals division on field testing and sale of insecticides. He was associated with the Pennsylvania Salt Manufacturing Company's agricultural chemicals research from 1945 until the present time.

D. M. McEachern Gets Bollworm Control Post

CORPUS CHRISTI, TEXAS — D. M. McEachern, who for the last six years has directed the pink bollworm control program for the government in south Texas, has been promoted to assistant project leader for the entire quarantine area. These new headquarters are at San Antonio, where he is assistant to B. W. White, helping to direct the fight against the pink bollworm in Texas, Arkansas, Louisiana, Mississippi, New Mexico and Arizona.

Mr. McEachern has spent nearly 35 years in helping control one of cotton's deadliest insects. Shortly after graduating from Clemson University, he was sent to East Texas where the pink bollworm was discovered in the early 1920's. Later he worked in the Big Bend country along the Rio Grande, and in Arizona.

Mr. McEachern will be succeeded by B. C. Stephens of Harlingen, who has been with the department since 1930. Mr. Stephens has been acting project leader for South Texas.

Joins Brea Chemicals

LOS ANGELES — Carlton L. Horine, formerly senior production engineer and head, China Lake pilot plant division of the propellents and explosives at U.S. Naval Ordnance Test Station, Inyokern, Cal., has joined the development department of Brea Chemicals, Inc. at Brea, Cal. as senior process engineer.

PESTICIDE SAFETY

(Continued from page 1)

a stuffer on the subject. It is suggested that the following points be stressed:

(1) Read the label.

(2) Observe and follow all directions and all cautions on the label.

(3) Store pesticides away from children, animals and irresponsible persons.

(4) Always keep chemicals in original labeled containers.

(5) Dispose of empty containers safely.

(6) If present labels do not include statements on safe storage and container disposal, include such warnings in future printings.

For the association's part, Mr. Mohr recommended:

(1) Urge universities, the extension services and farm advisers to include statements on safety practices in all of their literature and recommendations. Statements should cover points previously mentioned for the industry. Urge them to stress safety practices at growers meetings so as to more thoroughly impress them.

(2) Periodically prepare press releases on the subject of safe practices and submit to all agricultural publications.

(3) Collaborate with the National Safety Council for ideas and methods of better safety teaching.

(4) Urge all of the membership to participate in the program.

Mr. Mohr said that the objective of this safety program should be to teach people to use pesticides correctly as to proper dosage and methods of application, to observe all the precautions of handling and application, to store the products safely and to properly destroy or dispose of empty containers.

"You are all aware of the adverse publicity the industry gets every time there is a serious accident," Mr. Mohr said. "Besides the bad publicity there is the matter of financial liability.

"I am sure that we as an industry desire a clear conscience that we have done everything possible to educate the public at large on the subject of proper precautions and safe use of our products."

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A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Southern states.

"Safety Is Profitable"

The attitude of American industry toward its employees has taken a decided turn for the better so far as the safety of their employment is concerned. Our country as a whole is becoming more and more interested in humanity and its general welfare. Certainly, the lessening of pain and suffering is becoming more and more important, as is manifested by the civic projects of clubs, churches, and other organizations.

Now let us come down to the matter of safety in industry aside from the humanitarian interest in lessening pain and suffering. We all know that our insurance premiums on industrial labor are based on frequency and severity of accidents and the duration of labor loss due to them. Any method whereby accidents may be lessened in their frequency and severity is always reflected in the lessening of the cost of the insurance covering them.

Safety engineers are not only becoming a fashion but are a must in every organization. Their job is to see to it that machinery is properly protected to prevent accidents and that the personnel of the industrial plant is properly instructed in safety procedures to lessen the potential of unnecessary accidents. In every case where a well qualified safety engineer has been employed, the accident frequency and severity have been materially lessened.

In direct comparison, the insurance rates have dropped accordingly. If we are to believe that the old adage that "a dollar saved is a dollar earned," then most assuredly the reduced cost of accident insurance must appear on the profit side of the ledger. I know of one company which by direct attention to safety, saved 26% of its insurance premium during its first year of safety observance. That figure ran into several thousand dollars and entered over on the profit side is worth considering.

Let us look at another item of profit that is materially affected by safety. Every industrial plant is an integrated piece of machinery wherein each individual acts as an essential cog. His education and training in a particular job are rule sticks of his efficiency in turning out the amount of work that the job requires. When that individual becomes incapacitated for a period of time and another untrained individual has to take his place, the entire plant operation is reduced in its efficiency.

After all, a chain is only as strong as its weakest link, and the speed and efficiency of an industrial operation are only as fast and efficient as the weakest member in that chain. Therefore, it can be readily seen that the impaired efficiency brought about by the loss of a trained individual is bound to reduce the over-all efficiency and increase the cost of operation.

To say it another way, if all accidents could be avoided, the efficiency of any industrial plant would be materially increased, which in turn would mean a savings in cost and a greater profit.

Lastly, let us look at the psychological side for a moment. A good worker is always a happy worker. If he is injured and must lay off on part pay, he is definitely unhappy with his lot and with the management of his company. Such unhappiness is usually not cured as quickly as is his injured body.

Here again the morale of the entire organization can be affected, and down goes efficiency in like proportion to the amount of unrest, and down with it will go profits correspondingly.

In closing I would like to stress the point that the happiness and welfare of the individual is a direct measure of the happiness and welfare of the industrial organization of which he is a part.

One of the greatest attributes of a happy and well organized industrial organization is the safety under which the individuals are employed. This can easily be measured in dollars earned and dollars saved and end up with very significant figures on the black side of the ledger.—W. F. Wharton, Treasurer, Arizona Fertilizers, Inc., Phoenix, in Fertilizer Safety News Letter.

Read and Heed Labels!

Although not personally responsible for misuse of chemical pesticides and other compounds applied by farmers, the dealer in these materials stands to suffer considerable cutbacks in purchases when mistakes are made by customers.

All the state and federal officials with responsibility to inspect food products for too-heavy residues of pesticidal materials are very sensitive at this time about the matter. Whereas in the past it may have been possible once in a while for a grower to "get by" with careless applications of insecticides and fungicides, it is now too risky and the penalties too great to hazard.

Allen B. Lemmon, chief of the Bureau of Chemistry of the California Department of Agriculture has expressed pretty well the way the situation looks from the standpoint of a control official. He advises all growers to follow exactly the directions on labels, in order to avoid misuse. Failure to do this may result in penalties far outweighing the little trouble it would have been to do the job correctly.

"Improper use of the chemicals means violation of food laws," he reminds. "The marketing of fruits and vegetables with excessive pesticide residues may cause serious trouble for both the shipper and the farmer." He adds that farmers who thus misuse chemicals, regardless of whether or not such misuse is caused through mere carelessness, may find their products seized and themselves arrested.

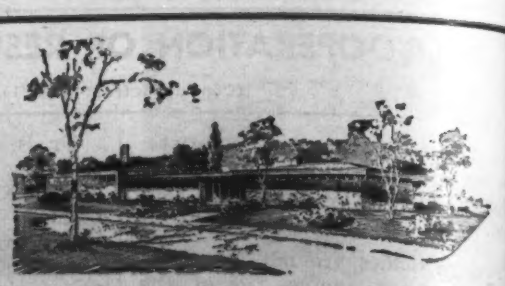
We realize that these may appear as hard-boiled threats and one may inquire about why such a fuss should be made. Still, it is the law and its provisions must be carried out.

The dealer's stake in this whole matter is rather great. It means that if Farmer Jones buys his pesticidal materials from the Schmaltz farm store and then goes blythely into his fruit and vegetable plots and applies excessive amounts of the product, Farmer Jones is going to be a very disgruntled gent if his produce should be seized. He could well arrive at the conclusion that "the stuff is no good" and decide not to bother with pesticides next year. "Might as well let the bugs have it," he may figure.

Every dealer knows what repercussions can result when seizures are made in a community. Even though neither the dealer himself nor the makers of the pesticide were in any way at fault, still the reputation of the toxicant suffers and the general attitude toward increasing use of chemicals is set back to a certain extent.

With all of this as a background, dealers should constantly keep in mind the need for talking with their farmer customers about reading and heeding instructions on labels. It's an old story, we know, but it is more important now than ever before.

Dealers should use every opportunity in conversation with growers to remind them about being careful not to use more concentrated sprays or heavier dosages of pesticides than are recommended on the label. Also, not to repeat applications more often than recommended and, of course, not to apply materials any nearer harvest time than the label advises.



CROPLIFE is a controlled circulation journal mailed to those responsible for the production and distribution of fertilizer and other farm chemicals and to retail dealers of the agricultural chemical industry in the U.S. To those not on the controlled list, CROPLIFE is available at $5 for one year, $9 for two years ($8 a year outside the U.S. and possessions). Single copy price, 25¢.

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MEETING MEMOS

Sept. 28-30—New England Fertilizer Conference, Poland Spring House, Poland Spring, Maine.

Oct. 3-5 — Carolinas-Virginia Pesticide Formulators Assn., Inc., Annual Meeting, Holly Inn, Pinehurst, N.C., J. B. Maddrey, 3111 Broad Creek Road, Norfolk 12, Va., Secretary-Treasurer.

Oct. 11—Western Agricultural Chemicals Assn., Annual Meeting, Hotel Claremont, Berkeley, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose, Cal., Executive Secretary.

Oct. 13-14—National Nitrogen Solutions Assn., Meeting and Equipment Display, Illinois State Armory, Springfield, Ill., Roy F. Broyhill, Dakota City, Neb., Meeting Chairman.

Oct. 17-18 — Fertilizer Section, National Safety Congress, LaSalle Hotel, Chicago; Thomas J. Clarke, Chairman.

Oct. 19-21—First International Conference on the Use of Antibiotics in Agriculture, Washington, D.C.

Oct. 24—Salesmen's Association of the American Chemical Industry, Fourth Annual Sales Clinic, Roosevelt Hotel, New York.

Oct. 27—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. LaSalle St., Chicago, Ill.

Nov. 2-3 — Annual Convention, Pacific Northwest Plant Food Assn., Pilot Butte Inn, Bend, Ore.; Leon S. Jackson, 702 Lewis Bldg., Portland, Ore., Secretary.

Nov. 2-5—Third annual Mid-Atlantic Farm and Home Show, Convention Hall, Atlantic City, N.J.; William A. Haffert, Jr., Sea Isle City, N.J., executive vice president.

Nov. 3-4—Northeastern Division, American Phytopathological Society, Eastern States Farmers Exchange, Inc., 26 Central St., West Springfield, Mass. B. H. Davis, Department of Plant Pathology, Rutgers University, New Brunswick, N.J., secretary.

Nov. 4—Fertilizer Section, South Carolina Annual Accident-Prevention Conference, Hotel Francis Marion, Charleston, S.C.; Anton L. Foster, International Minerals & Chemical Corp., General Chairman.

Nov. 7-8—California Fertilizer Assn., Thirty-second Annual Convention, Hotel Mark Hopkins, San Francisco; Sidney H. Bierly, Executive Secretary and Manager, 475 Huntington Drive, San Marino, Cal.

Nov. 8-10—17th Annual New York State Insecticide, Fungicide and Application Equipment Conferences; Bibbins Hall, G.L.F. Exchange, Ithaca, N.Y.; C. E. Palm, Cornell University, Ithaca.

Nov. 29-Dec. 2 — Entomological Society of America, Netherlands Plaza Hotel, Cincinnati.

Dec. 5-7—Agricultural Ammonia Institute, Kansas City; Jack F. Criswell, Executive Vice President, Claridge Hotel, Memphis, Tenn.

Dec. 5-7—Chemical Specialties Manufacturers Assn., 42nd Annual Convention, Roosevelt Hotel, New York; H. W. Hamilton, 50 E. 41st St., New York 17, N.Y., Executive Secretary.

Dec. 8-9 — Michigan Fertilizer and Lime Conference, Michigan State College, East Lansing.

Dec. 15-16—Beltwide Cotton Production Conference, Hotel Peabody, Memphis, Sponsored by the National Cotton Council.

Dec. 28-30 — American Phytopathological Society, Atlanta, Ga.; Glenn S. Pound, University of Wisconsin, Madison, Wis., Secretary.

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Jan. 4-6—Weed Society of America, Charter Meeting, Hotel New Yorker, New York; W. C. Shaw, U.S. Department of Agriculture, Beltsville, Md., Secretary-Treasurer.

Jan. 15-17 — New Mexico Grain & Feed Dealers Assn., Annual Convention, Hilton Hotel, Albuquerque, with Special Portion for Fertilizer and Farm Chemical Dealers; H. B. Hening, Albuquerque, Secretary.

Jan. 16-18—Southern Weed Conference, Ninth Annual Meeting, Hotel Jung, New Orleans; Dr. E. G. Rodgers, Florida Agricultural Experiment Station, Gainesville, Secretary-Treasurer.

Jan. 26-29 — Agricultural Aircraft Assn., Inc., Sixth Annual Convention, Wilton Hotel, Long Beach, Cal.; Wanda Branstetter, Route 3, Box 1077, Sacramento, Cal., Executive Secretary.

Feb. 15-17—California Weed Control Conference, Sacramento and Davis, Cal.; Oliver A. Leonard, Botany Dept., University of California, Davis, Cal., Secretary.

Feb. 15-17 — Western Weed Control Conference, Sacramento and Davis, Cal.; W. C. Robacker, U.S. Department of Agriculture, Nevada Agricultural Experiment Station, Reno, Nev., Secretary-Treasurer.

June 28-30—Association of Southern Feed & Fertilizer Control Officials, 14th Annual Convention, Hotel Roanoke, Roanoke, Va.; Bruce Poundstone, Kentucky Agricultural Experiment Station, Lexington, Ky., Secretary-Treasurer.

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